DIVISION OF ENTOMOLOGY

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REPORT OF WORK

OF THE

EXPERIMENT STATION

OF THE

HAWAIIAN SUGAR PLANTERS' ASSOCIATION

Leaf-Hoppers—Supplement

(HEMIPTERA)

BY G. W. KIRKALDY

HONOLULU, H. T.

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LETTER OF TRANSMITTAL.

To the Experiment Station Committee of the Hawaiian Sugar Planters' Association, Honolulu, T. H.

Gentlemen:—I, herewith, submit for publication Bulletin III of the Division of Entomology. This has been prepared by Mr. G. W. Kirkaldy, and is supplementary to and completes Bulletin I.

Yours obediently,

R. C. L. PERKINS,
Director, Division of Entomology.

Honolulu, T. H., April 29th, 1907.

ADDENDA.

P. 11: *Tartessus iphis* sp. n.
Vulturnus vaccors sp. n.

P. 12: *Siphanta sensilis* sp. n.
Nesopompe (subg. n. of *Cixius*).
Nesochlamys g. n.
N. vitiensis sp. n.

P. 13: A number of spp. of "Delphax" have been misplaced, also *"P" dilpa* should be *"D."*

INTRODUCTION.

In the present memoir, the determination and description of the Leafhoppers collected by Prof. Koebele and Dr. Perkins, and partially discussed in the ninth part of Bulletin I, are now completed,— together with those found by Mr. Muir in the Fiji Isles, as well as two interesting forms from China.

In the former contribution, 85 genera and 212 species were erected as new, while 58 genera (and subgenera), and 175 species (and varieties) are now added, a total of 143 genera and 387 species, making a considerable increase in our knowledge of Australo-Fijian Leafhoppers, as almost all of the new forms are from these countries. At the same time, it must be insisted that these form but a small proportion of the total Leafhopper Fauna of the Countries mentioned.

The Australasian (*) Region seems to embrace four subregions:

1. The Austromalayan (or Papuan), including that of the same name of Wallace, but extending to include the tropical forest of Queensland, New Caledonia and adjacent islands as far as the Fijian Archipelago.
2. The Euronotian (or Bassian), including the Southeastern third of Australia and Tasmania.
3. The Maorian, including New Zealand and adjacent islands.
4. The Westralian, or West Australia.

Nothing is known of the indigenous Hemiptera of Tahiti, Samoa, the Tuamotus, &c., but they are probably a mixture of various faunas. The Hawaiian Archipelago forms an unattached subregion of great antiquity. From the little that is known of them, the Carolines and Marshalls and perhaps the Mariannes, belong to the Austromalayan.

* I prefer this name of Huxley's to the usual "Australian" of authors. It is very confusing to term the whole Region 'Australian,' as one can then not understand readily whether the mainland, or the region as a whole, is intended.

I think therefore that Wallace's "Polynesian" Subregion should be rejected.

Celebes is usually included in the Papuan, but is perhaps, at present, best regarded as an unattached subregion.

The Fijian Isles seem to have a well marked affinity with New Guinea and the neighboring groups, or with the first of the following Australian.

The Australian Continent seems to possess four principal faunas:

1. The tropical forest, an impoverished extension of the Austromalayan, little known, and producing such forms as *Neomelicharia, Ancipo* and some fine Derbidae.
2. Eucalyptus-Forest, characterized by *Eurymela, Eurinopsyche* and *Platybrachys*. This is typical of the Euronotian.
3. Western Australia, which stands apart from the others.
4. Grass-lands and coast lands, probably typical in another way of the Euronotian, and characterized by common-place *Deltocephalus* and *Asiracidae*.

In the habitats, "K" stands for Prof. Koebele, "P" for Dr. Perkins, and "M" for Mr. Muir.

Mr. Muir's researches in Fiji were confined to Viti Levu. *Suva* is on Suva Bay in the Southeastern part; *Navua* on the river of the same name in the South-central; *Rewa*, on the Rewa river, a little east from Suva, and *Ba* (=Mba) on the Ba River in the northwest.

An expression of appreciation is due to Mr. W. E. Chambers, who has enriched this memoir with more than three hundred figures. No work on Hemiptera has previously appeared, in which such careful and detailed drawings of genitalia are given, affording characters which are the final arbiters of "species" in certain groups.

BIOLOGIC NOTES.

Stridulation.

In my first memoir (p. 285) it was stated that though *Perkinsiella saccharicida* had often been heard to stridulate distinctly, by the Entomologists of this Station, researches on the phenomenon had not yet been made

On his return from Fiji, Mr. Muir handed me the following notes, upon which it is scarcely necessary to enlarge:

"One hot, still morning, when collecting in Fiji, my attention was attracted to a small palm, from which a distinct noise of insects stridulating proceeded. I found the underside of the leaves covered with hundreds of a small red leafhopper (*Muiria stridula* Pl. 20 figs. 10-13). Their tegmina and wings were erected above the back and occasionally gave one or two rapid movements; sometimes the abdomen was jerked up and down. I recognized it as similar to one I had taken in Natal some years ago, in which the wings were exceedingly small and used entirely as stridulating organs. Upon examination I found the wings in the present species were likewise used for that purpose. The tegmina are about 6 mill. long, whilst the wings are only half a millimetre, the anal lobe being larger than the rest of the wing, thickened and corrugated on the hind margin of the upper side.

"The costal margin is turned over and catches into a fold along the margin of the tegmina; by this means it moves with the tegmina. The corrugated surface is opposed to the anterior angles of the abdomen where there are several white bristles situated.

"In another, (*Proutista moesta* Pl. 20 figs. 8-9) from Java, the tegmina are about 5½ mill. long and the wings 3 mill., the anal area larger in proportion to the rest of the wing and corrugated on the upper side.

"In another, (*Pyrrhoneura saccharicida* Pl. 20 figs. 6-7), from Fiji, the tegmina are about 4 mill. long and the wings 3 mill. the broad edge of the anal area being corrugated. The corrugations thin out gradually on each side, and one can see that

they are only a prolongation and intensification of the minute corrugations that border the hind margin of the wing from the end of the costal margin to the base of the wing.

"In another, (*Lyricen imthurni*, Pl. 20 figs. 3-5), from Fiji, the proportional size of the tegmina to the wings is more normal, about 7½ to 5½, and the anal areas of the latter are normal, bearing a strongly corrugated patch near the basal edge.

"Upon examining the anal area of the wing of *Perkinsiella saccharicida*, an enlarging of the corrugation along the basal portion of the edge can be seen. I am in doubt if this could be the means by which they produce the sound."

(Pl. 20 figs. 1-2 represents the wings of *Pyrrhoneura citharista*). Mr. Muir, also, before leaving for the Orient, left me some mounts of tegmina and wings, from which Pl. 20 figs. 1-9 have been made.

I have examined a considerable amount of material and find the stridulatory area developed as follows:

In most of the Derbidae and in some Asiracidae, this structure is present, in both sexes. I cannot find it in any other Auchenorhynchi, nor in those Asiracids in which the wings are rudimentary.

Since my last memoir, Froggatt has published "Australian Insects" (1907), in which there are short biologic notes on several Homoptera.

CLASSIFICATION.

I have nothing to add to my general remarks on the distinctness of the Fulgoroidea, and their high place in the system. I think however that the Cicadoidea and Tetigonioidea should be merged, for although the former are less allied to any of the families of the latter, than these are among themselves, yet the general structure is fundamentally similar.

The system of the Auchenorhynchi now adopted is as follows:

Superfam. 1 Cicadoidea
Fam. 1 Cicadidae
Fam. 2 Cercopidae
Subfam. 1 Cercopinae
2 Machaerotinae
Fam. 3 Tetigoniidae (embracing 10 provisional tribes, viz.: Ledrini, Stenocotini, Eurymelini, Phrynomorphini, Eupterygini, Cephalelini, Iassini, Macroceratogoniini, Penthimiini and Tetigoniini).
Fam. 4 Membracidae
Superfam. 2 Fulgoroidea
Fam. 1 Poekillopteridae
Subfam. 1 Lophopinae
Subfam. 2 Tropiduchinae
(Tribes Tropiduchini and Tambiniini)
Subfam. 3 Ricaniinae
(Tribes Ricaniini and Bladinini)
Subfam. 4 Poekillopterinae
(Tribes Poekilopterini and Phalaenomorphini)
Subfam. 5 Tonginae
Fam. 2 Issidae
Subfam. 1 Issinae
(Tribes Caliscelini, Issini)
Subfam. 2 Amphiscepinae
Subfam. 3 Enrybrachyinae
Fam. 3 Tetigometridae
Fam. 4 Fulgoridae

Subfam. 1 Cixiinae
(Tribes Cixiini, Achilini, Dictyophorini)
Subfam. 2 Fulgorinae
(Tribes Fulgorini, Omalocephalini, Aphaenini)
Fam. 5 Asiracidae
Fam. 6 Derbidae
(Tribes Derbini, Nisiini).

This is however merely tentative, as our knowledge of most groups is still extremely superficial, and nothing satisfactory can be done, till the nymphal instars of many species are described and figured.

There is no need to furnish characters again, separating the Fulgoroidea from the Cicadoidea, and the various families, and other divisions, are separated tabularly further on in their several places.

In my horismology, I have substituted "brachial" for "cubital," for the name of the third main vein arising from the apex of the basal cell, as there can be no doubt what "brachial" is, while there is much difference of opinion as to what "cubital" is. Melichar for instance, terming "cubital" what I call "basal stem of the radiomedian."

LIST OF SPECIES.

The following are the new or notable genera and species etc., described in the following pages: (*) signifies that the nymphs are noted or figured.)

Fam. Cicadidae.
Cicadetta tympanistria, sp. n.
Fam. Cercopidae
Nesaphrestes, g. n.
N. dreptias, sp. n. *
N. ptysmatophilus, sp. n.
Nesaphrogeneia, g. n.
N. vitiensis, sp. n.
Fam. Tetigoniidae
Stenocotis dimorpha, sp. n.
S. reticulata, sp. n.
Smicrocotis siduica, sp. n.
Eogypona *
Rhotidus * *stali* (n. n.)
Idiocerus kisscis, sp. n.
I. nymphias, sp. n.
I. oreias, sp. n.
I. orodemnias, sp. n.
I. xantho, sp. n.
I. hylcorais, sp. n.
I. cupido, sp. n.
I. napais, sp. n.
I. aulonias, sp. n.
I. nereias, sp. n.

Eurymelias, g.n. (*hyacinthus*)
Ipo pompais, sp. n.
Macropsis aeroe, sp. n.
M. thymele, sp. n.
M. thyia, sp n.
M. thoantias, sp n.
Alseis, g. n.
A. osborni, sp. n.
Epipsychidion epipyropis
Oncopsis balli, sp. n.
Aceratagallia, g. n. (*sanguinolentus*)
Agalliopsis, g. n. (*novellus*)
Eurinoscopus hamadryas, sp. n.
Hybrasil, g. n.
H. brani, sp. n.
Dryadomorpha lotophagorum, sp. n.
Tortor, g. n.
T. daulias, sp. n. *
Tartessus idyia, sp. n.
T. itonias, sp. n.
T. issa, sp. n.
T. io, sp. n.
T. iambe, sp. n.
T. ianthe, sp. n.
T. ianassa, sp. n.
T. ianeira, sp. n.
T. iokaste, sp. n.
Iberia, g. n. (*bolivari*)
Thymbris, g. n.
T. inachis, sp. n.
T. iphianassa, sp. n.
Putoniessa, g. n.
P. dignissima, sp. n.
Xestocephalus vitiensis, sp. n.
X. pallidiceps, sp. n.
X. p. var.*contortuplicatus*, n.
X. p. var. *decemnotatus*, n.
X. australensis, sp. n.
X. purpurascens, sp. n.
X. sidnicus, sp. n.
Eutettix melaleucae, sp. n.
Deltocephalus lotis, sp. n.
D. polemon, sp. n.
D. histrionicus, sp. n.
D. lucindae, sp. n.
Conosanus chloripps, sp. n.
C. hospes *
Soracte, g. n.
S. apollonos, sp. n.
Nephotettix eurytus, sp. n.
Limotettix filicicola, sp. n.
L. tachyporias, sp. n.
L. capitatus, sp. n.
Thamnophryne, g. n.
T. nysias, sp. n.
Driotura aristarche, sp. n.
Allygus lotophagorum, sp. n.
Lonatura austrina, sp. n.
Nesosteles dryas, sp. n.
N. aurantiigera, sp. n.
N. phryne, sp. n.
N. chloe, sp. n.
Apheliona, g. n. (*bioculata*)
Cicadula hyadas, sp. n.
C. euryphaessa, sp. n.
C. vitiensis.
Erythroneura sidnica, sp. n.
E. doris, sp. n.
E. lalage, sp. n.
E. leucothoe, sp. n.
E. rewana, sp. n. *
Dialecticopteryx, g. n.
D. australica, sp. n.
Paradorydium brighami, sp. n. (subg. *Deltodorydium*, n.)
P. ovidii, sp. n.
Tharra kalypso, sp. n.
T. ogygia, sp. n.
T. kassiphone, sp. n.
T. nausikaa, sp. n.

T. sp? *
Muirella, g. n.
M. oxyomma, sp. n.
Vulturnus vulturnus
V. voltumna, sp. n.
V. virgidemia, sp. n.
V. vanduzeei, sp. n
V. vultuosus, sp. n.
V. vaedulcis, sp. n. *
V. vappa, sp. n.
Leucopepla, g. n.
(*bituberculata*)
Syringophora, g. n. (*brevis*)
Cymbalopus, g. n.
(*bigibbosa*)
Fam. Membracidae
Zanophara leda, sp. n.
Z. albovittata, sp. n.
Acanthuchus iasis, sp. n.
A. euryone, sp. n.
A. eurynomus, sp. n.
Fam. Peckillopteridae
Eodryas, g. n. (*melichari*)
Dolia, g. n. (*walkeri*)
Astorga saccharicida *
Siphanta granulicollis
S. acuta *
Thanatochlamys, g. n.
T. tristis, sp. n.
Fam. Issidae
Apsadaropteryx, g. n.
(*elongatulus*)
Phacopteryx, g. n.
P. sidnicus *
Orinda, g. n. (*lucindae*)
Chlamydopteryx, g. n.
C. eurobium, sp. n.
Tylana dyakana, sp. n.
Fam. Fulgoridae
Oliarus lilinoe, sp. n.
O. tasmani
O. lubra var. *vitiensis* n.
O. saccharicola, sp. n.
O. melanesica, sp. n.
Urvillea, g. n.
Nesocharis, g. n.
N. kalypso, sp. n.
Myndus vitiensis, sp. n.
Leirioessa, g. n.
L. tortricomorpha, sp. n.
L. vitiensis, sp. n.
Leptochlamys, g. n.
L. compressa, sp. n.
Dystheatias, g. n.
D. beecheyi, sp. n.
D. b. var *fuscata*, n.
Australoma, g. n.
A. austrina, sp. n.
Quirosia, g. n.
Q. vitiensis, sp. n.
Thenelia sub. *Nephelia*, n.
I. (*N.*) *bicuncata*, sp. n.
I. (*N.*) *tristis*, sp. n.
Callinesia, g. n.
C. pulchra, sp. n.
C. ornata, sp. n.
C. venusta, sp. n.
C. pusilla, sp. n.
Callichlamys, g. n.
C. muiri, sp. n.
C. undulata, sp. n.
Fam. Asiracidae
Ugyops vitiensis, sp. n.
Melanesia, g. n.
M. pacifica, sp. n.
M. p. var *strigata*, n.
Criomorphus australiae, sp. n.
Dicranotropis anderida, sp. n.
D. aristoxenus, sp. n.
D. muiri, sp. n.
Purohita arundinacea
Leimonodite, g. n. (*beckeri*)
Perkinsiella sinensis, sp. n.
P. pseudomaidis *

P. graminicida *
P. saccharicida *
P. viticnsis *
Hadeodelphax persephone, sp. n
H. pluto var. *pallidior*, n.
D. dryope, sp. n.
D. ochrias, sp. n.
D. matanitu, sp. n.
D. disonymos, sp. n.
D. hyas, sp. n.
D. geranor, sp. n.
D. kolophon, sp. n.
D. kaha, sp. n.
D. anemonias, sp. n.
D. pylaon, sp. n.
D .albotristriatus, sp. n.
Tropidocephala dryas, sp. n.
T. hamadryas, sp. n.
Anectopia, g. n.
A. mandane, sp. n.
A. igerna, sp. n.
Haplodelphax, g. n.
H. inucicola, sp. n.
H. naias, sp. n.
H. euronotianus, sp. n.
Megamelus proserpina, sp. n.
M. persephone, sp. n.
M. sponsa, sp. n.
"Delphax" thyestes, sp. n.
D. ordovix, sp. n.
D. parysatis, sp. n.
D. ostorius, sp. n.
D. lazulis, sp. n.
D. leimonias, sp. n.
D. astyanax, sp. n.
D. algebra, sp. n.
P. dilpa, sp. n.
Proterosydne, g. n.
P. arborea, sp. n.
Stenocranus pacificus, sp. n.
S. agamopsyche, *
Saccharosydne, g. n.
S. saccharivora *
Fam. Derbidae
Suva koebelei
Basilecocephalus thaumatonotus
Phaciocephalus nesogonias, sp. n.
P. nesodreptias, sp. n.
P. miltodias, sp. n.
P. pullatus, sp. n.
P. minyrias, sp. n.
Thyrocephalus leucopterus
Rhotana halosydne, sp. n.
Niphadodite, g. n.
N. insulicola, sp. n.
Pyrrhoneura saccharicida
P. citharista, sp. n.
P. (*Nesoneura* subg. n.)
P. (*N.*) *vitiensis*, sp. nov.
Nesocore, g. n.
N. fidicina, sp. n. *
Lyricen, g. n.
L. imthurni, sp. n.
Proutista lumholtzi
Nesoniphas, g. n.
N. insignissima, sp. n.
Philadelphcia pandani
Muiria, g. n.
M. stridula, sp. n.
Phantasmatocera arborea
Nesophantasma, g. n. (*viticnsis*)
Swezeyia lyricen
Sikaiana nesiope, sp. n.

Superfamily *CICADOIDEA.*

This, after renewed investigation, appears to include the Tetigonioidea, thus embracing four families, which are distinguishable in the imago state as follows:

1. Three subcontiguous ocelli; sensory organs on the two basal segments of antennal flagellum very numerous; fore femora incrassate; no arolia; abdomen in the males with a sonorous apparatus on each side; venation very characteristic, tegmen typically with 5 "discoidals" and 8 apical veins, which occupy its greater part.....1 Cicadidae

1a Two ocelli, sometimes functionless; only a few sensory organs on the basal segements of antennal flagellum; fore femora rarely incrassate; arolia large.....(2)

2 Antennal flagellum composed of a large subpyriform basal segment and a slender seta; hind tibiae with one or two strong spines..... 2 Cercopidae

2a Antennal flagellum composed of numerous segments; hind tibiae unarmed; or if spined, almost always with more than 2 strong spines; usually seriately bristly.....(3)

3 Genae more or less dilated; pronotum never prolonged backwards ..... 3 Tetigoniidae

3a Genae not or scarcely dilated; pronotum prolonged backwards in a process (except in a few forms of dubious position) ..... 4 Membracidae

The ova are usually, (perhaps always), in all these families, inserted in slits made in twigs or leaves.

The families may be distinguished in the nymphal stages (or at least the ultimate) temporarily as follows: (there are never any ocelli, nor are there special sensory organs on the antennae, head or abdomen, etc.):

1 Frons with very numerous, closely set bristles in the middle; antennae with about 9 segments, decreasing in size from the basal one. Fore femora enormously incrassate, with one or more large spines beneath; fore tibiae raptorial, with spines or large tubercles beneath; fore tarsi with 2 segments, the first annuliform, arising at about two-thirds of the length of the tibia and directed backwards, second segment long, slender, cylindric, with 2 uneven claws. Fore coxae not shorter than femora. No arolia. Middle and hind tarsi with 2 segments, first very short .....1 Cicadidae

1a Frons not bristly. Fore femora rarely incrassate, not spined beneath; fore tibiae not raptorial; fore tarsi bisegmentate, of varying proportions, the basal segment arising from the apex of the tibia; 2 subeven claws. Fore coxae shorter, generally very

much shorter, than femora. Arolia present. Middle and hind tarsi never foliaceous (except the head and perhaps the legs....(3)

2 Dorsal surface more or less closely granulated, of very varying form, often foliaceous.....3 Membracidae.

2a Dorsal surface not granulate. General form of the adult, never foliaceous (except the head and perhaps the legs....(3)

3 Legs not spined or bristly. Antennae with 7 to 9 well marked, subcylindric, segments .....4 Cercopidae

3a Legs nearly always bristly. Antennae usually n arly as in the adults .....2 Tetigoniidae

The Cicadidae are on the whole the most primitive of the Cicadoidea, despite the specialization of the sonorous orgains in the males. Their undeserved elevation to the front of the Homoptera is due to the latter circumstance and to their, usually, larger size. Their primitiveness is displayed in their general form, and especially in the structure of the antennae in all stages, approaching in this the Heteroptera. The three other families are rather more closely allied among themselves than to the Cicadidae; in the nymphs, the antennae of the Cercopidae approach the condition of the Cicadidae, but are perhaps a little more specialized in the adults than they are in the adult Tetigoniidae. In the latter, the legs are almost always more specialized than in the Cercopidae, which, on the whole, may be accorded the lower rank. The Membracidae are simply specialized Tetigoniidae, by way, probably of forms like *Agallia*.

Most authors persist in estimating the Membracidae as a very distinct group. Fowler (1894 Biol. Centr. Amer. Hom., II, p. 1) says, for example, "The Membracidae, as a whole, form one of the most distinct and unmistakable groups of all insects." How little this is the case is shown by the fact that today the systematic position of *Ulopa*, *Aethalion* and others is disputed, while Fowler himself referred the Eurymeline *Gargaropsis* (a synonym actually of *Bythoscopus*) to the Membracidae. A little, fantastic, development of the pronotum and minor changes in the head and legs are almost all that are necessary to change an *Oncopsis* into a Membracid. The earlier nymphs of such Membracids as *Entylia* are essentially Tetigoniine in form and structure.

It may be useful to repeat that these 4 families, Cicadidae, Cercopidae, Tetigoniidae and Membracidae are closely elated, and that it is very absurd to separate the first from the other three, as do most authors, by the Fulgoroidea; while still more absurd

is the usual order of Cicadidae, Membracidae, Fulgoroidea, Cercopidae, Tetigoniidae.

Cicadidae.

The Cicadidae have been divided by Distant into three subfamilies, characterized by the tympanal coverings, but the divisions do not seem natural, the Cicadidae being in fact remarkably homogeneous.

(a). Australian Species.

As previously remarked, the Australian Cicadidae were discussed by Goding & Froggatt (1904 P. Linn. Soc. N. S. Wales XXIX, 561-670, Pls. XVIII-XIX); since then a number of supposedly new genera and species have been described by Distant and enumerated in his "Synonymic Catalogue of Homoptera. Part I Cicadidae" (1906, pp. 1-207). The Australian forms added since Goding & Froggatt's Monograph are as follows:

1 *Macrotristria nigronervosa* Distant 1904 A. M. N. H. (7) XIV 329..... Queensland
2 *Cicada graminea* op. c. 428..... Queensland
3 *Dundubia vaginata* (Fabr.) [=*mannifera* Stal] (*Tettigonia vaginata* Fabr., 1787 Mant. Ins. II 266), said to be from Australia as well as India and the Malayan Region, but doubtfully correctly.
4 *Abricta elseyi* Distant 1905 A. M. N. H. (7) XVI, 281 .....North Australia.
5 *A. castanea* op. c., 27.....North Australia.
6 *A. burgessi* op. c., 28.....Queensland.
7 *Burbunga inornata* op. c., 29.....W. Australia.
8 *Gudanga boulayi* op. c., 208.....do.
9 *Cicadetta waterhousei* (*Melampsalta*) op. c., 271..... ..... S. Australia.
10. *C. lactea* (*M*) l. c.....Victoria.
11 *C. issoides* (*M*) op. c., 272..... ..... New South Wales, W. Australia.
12 *C. montrouzieri* (*Birrima*) op. c., XVII 388 .... New South Wales.
13 *Pauropsalta stigmatica* 1905, op. c., XVI, 273..S. Australia.
14 *P. dameli* l. c.

15 *Urabunana segmentaria* op. c., 274.....Queensland.
16 *Cyclochila virens* 1906 Entom., XXXIX 148..Queensland.
N. B. *C. australasiae* var. *spreta* God. & Frogg. was omitted in Mr. Distant's Catalogue.

(b). Fijian Species.*

Only four species have been noted by Distant, and I can add only 3, (2 from my own collection), one of which, however, is new.

1 *Cyclochila australasiae* (*Tettigonia*) Donovan 1805 Ins. New Holland, Hem. Pl. 2, f. 1; a large male, expanding 120 mm. (in my collection). (**)
2 *Macrotristria angularis* (*Cicada*) Germar 1834 Rev. Ent. II, 68; a large male, expanding 131 mm., with dark ferruginous frons (in my collection). (**)
3 *Cicada kuruduadua* Distant 1881 Tr. E. S. London 645; Waterhouse 1882 Aid ident. Ins. I, Pl. C.
4 *Sawda* (?) *vitiensis* Distant 1906 Entom XXXIX, 12. (*Sawda* is probably not distinct from *Cosmopsaltria*).
5 *Diceropyga distans* (*Dundubia*) Walker 1858 List. Hom. Suppl. 10 (=*subfascia* (*Dundubia*) op. c., 11), recorded from Ovalau by Walker; 2 males and 1 female, the largest expanding 92 mill., taken at Rewa (March) by Mr. Muir.
6 *D. stuarti* (*Cosmopsaltria*) Distant 1882 Pr. Zool S. London 125 Pl. VII, f. 2;

Mr. Muir has taken 2 males at Rewa (March), which differ from Distant's descriptions as follows; they are 37 mill. long to the apex of the tegmen and expand 72 mill, being thus much larger; the frons is not so much produced basally as in Distant's figure, and (as somewhat shown in Distant's figure) the opercula do not nearly reach two-thirds of the length of the abdomen. Further, judging again by the figure, the opercula are less divergent during their first half, interiorly, and then more obliquely rounded.

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* I employed the terms "Viti" and "Vitian" in my first memoir, but Dr. Brigham assures me that "Fiji" and "Fijian" are the correct terms to use.

** Mr. Froggatt, who has examined these specimens, doubts very much that they came from Fiji.

Cicadetta Kolenati.

This is a large genus of about one hundred described species, about three-fifths belonging to the Australasian Region. The following species is the first recorded from the Fiji Isles, and is the seventh Fijian Cicadid.

1. *tympanistria* sp. nov.

Pl. 1, figs. 1-3.

Male. Ochreous; ocelli narrowly and incompletely margined with black. Eyes dark purplish brown. Pronotum with a median stripe and the hind margin yellow; six wedge-shaped black spots, the lateral ones rather irregular. Mesonotum a little embrowned, with 3 irregular black suffusions, the middle one somewhat dumb-bell shaped, with an incomplete yellowish-brown line down its middle; tufted posteriorly with golden yellow hair. Cruciform elevation yellow, the ends of the arms more or less fuscous. Metanotum yellow. Tegmina and wings milky hyaline, venation dark fuscous except the costal, subcostal, and sutural veins of the former which are yellowish green. The base and sides of the first tergite black, rest of this, the 2nd and 3rd (the latter narrowly dark apically) and basal half of 4th, yellow, the rest more or less fuscous. The whole of the underside luteous except as follows: antennal whip more or less fuscous; labium, tibiae and tarsi greyish-yellow; spines on fore femora black-tipped; sides of first sternite widely fuscous; apical three-fourths of abdomen purplish fuscous. Vertex rather flat, scarcely prominent before the eyes, about as wide between the eyes as the width of an eye. Frons rather narrow, scarcely as wide at base as the tempora together. Labium reaching just beyond middle coxae. Pronotum widening sublaminately posteriorly, not toothed laterally. Fore femora with three spines, the 1st the longest. Opercula oblique, narrow, at least twice as long as wide, subconstricted medianly externally, not reaching to the apical margin of the first sternite. Metasternum produced medianly in a small subvertical plate. Medioradial stalk elongate, completely fused, about as long as its first inferior branch; first apical cell a little longer than the second. Pygophor elongate, transversely striate.

Length to apex of abdomen 11 mill., expense of tegmina 30 mill.

Hab. Fiji, Rewa. (M).

The colouring, venation and opercula separate this from any *Cicadetta* known to me. It has an additional peculiarity in that the membranal appendix to tegmina and wings is of the slightest possible description, being visible only where the cells in meeting apically are very slightly notched.

Cercopidae.

The nymphs have, in all the forms I have seen, spineless and bristleless legs.

Since my first memoir, I have acquired a copy of Westwood's "Notice of a tube-making Homopterous insect from Ceylon" (Tr. E. S. London 1886 pp. 329-33, Pl. VIII), from which the systematic position of the remarkable *Machaerota* is recognizable. It is evidently closely allied to *Polychactophyes* and *Pectinariophyes*. I cannot recollect the exact appearance of *Hindola*, of which I have now no specimens for reference. This is the same as the preoccupied *Carystus* of Stal, and I do not think that the Swedish author would have placed *Carystus* and *Machaerota* in different subfamilies if the former had been the same as *Polychactophyes*. I cannot recognize Stal's subfamilies, the characters he uses to differentiate the 'Cercopinae' from the 'Aphrophorinae' being to me of little value for that purpose. Two subfamilies are here accepted, and are separable as follows:

1 Subcostal vein of wing forked about the middle (or basal of that), so that there is a "supernumerary" cell. [Pl. 1, fig. 4]. Nymphs, so far as known, living in their own frothy secretion. ..... *Cercopinae.*

2 Subcostal vein not forked, so that there is no supernumerary cell: veins united near the apical margin. [Pl. I, fig. 5]. Nymphs forming calcareous cases..... *Machaerotinae.*

Cercopinae.

The Australian and Fijian genera are disposable as follows, more for convenience than as an expression of their relationships:

1 Anterior margin of pronotum rounded.....(2)

1a Anterior margin of pronotum straight.....(6)
2 Head strongly narrowed near the base, elongate, subascendant.....5 *Philagra*
2a Head not longer than wide across the eyes, not suddenly narrowed.....(3)
3 Tegmina very convex, little longer than broad..4 *Bathyllus.*
3a Tegmina little convex, at least twice as long as broad..(4)
4 Vertex and pronotum carinate.....1 *Cercopis.* [=*Aphrophora*].
4a Vertex and pronotum not carinate.....(5)
5 Tegmina with level surface, pubescent, not punctured..... 2 *Eurycercopis.*
5a Tegmina irregularly raised and depressed, not pubescent, but very closely punctured.....3 *Nesaphrestes.*
6 Ocelli nearer to one another than to the eyes.....(7)
6a Ocelli not nearer to one another than to the eyes..... 11 *Cosmoscarta.*
7 Frons sulcate.....(8)
7a Frons not sulcate.....(11)
8 Posterior margin of pronotum medianly truncate..... 7 *Aufidellus.*
8a Posterior margin of pronotum emarginate.....(9)
9 Pronotum somewhat hairy, with 8 callous spots along the anterior margin.....8 *Petyllis.*
9a Pronotum with not more than two callous spots.....(10)
10 Tegmina subopaque, pale, yellowish-brown, veins broad and clearly marked.....9 *Aufiterna.*
10a Tegmina opaque, coriaceous, black and red, veins narrower, more obscure.....10 *Euryaulax.*
11 Scutellum longer than wide..... .....12 *Tomaspis* (two Walkerian species).
11a Scutellum equilateral .....13 *Nesaphrogenia*

Nesaphrestes gen. nov.

Allied to *Clovia*, but the clypeus is longitudinally carinate, generally strongly, and the tegmina are much narrower. I have no examples of *Clovia* now to examine, but comparing with the rather poor figure of *C. birarcusis*, Kirkaldy (in Tr. E. S. London 1905, Pl. XVII, f. 3.) the pronotum in *Nesaphrestes* is acute-angularly emarginate posteriorly, also the brachial vein of the wing forks between the cross-vein and the apex, (not *at* the cross-vein), and there are 4 apical cells in the teg-

men. Also allied to *Eurycercopis*, but the tegmina are unevenly impressed (principally longitudinally and along the subcosta), and are finely and closely punctured. Type *muiri*. There are two species, distinguished by the size, colour, &c.

1. *dreptias* sp. nov.

Vertex, pronotum and scutellum pale yellowish-brown, suffused and transversely barred, brokenly and irregularly, with darkish fuscous, or irregularly suffused; posterior angle of scutellum pale yellowish-brown. Frons ventrally pale yellowish-brown, with curved concentric dark fuscous lines radiating from a median pale yellow line and practically attaining the lateral margins. Apical third of frons, the clypeus, lora coxae, sterna in part laterally, apical segment of labium pleurites, &c., blackish. Tegmina coriaceous, fuscous, darker on the corium, a spot on the extero-lateral margins near the apex, and the apical and subapical veins, whitish. Fore and middle femora blackish-brown, pale at the apex, hind femora blackish brown; tibiae dark fuscous, annulate or marked with brownish-testaceous.

Female. Pygophor pale beneath, ovipositor dark.

Length 8-9½ mill.

Hab. Viti Levu, Rewa (March, Muir's No. 165), on a native tree "in the bush."

Nymphs pale testaceous, hind tibiae polished, spineless. Probably live in their own secretion.

2. *ptysmatophilus* sp. nov.

Brownish-ochraceous; face, pro- and mesosterna laterally, and tergites mostly, blackish; antennae ochraceous; sometimes a faint pattern of radiating lines on frons towards the lateral margins. Tegminal veins pale yellowish or yellowish-fuscous. Exterior half of basal third of corium suddenly and angularly narrowing on the middle third of exterior margin, blackish, a fuscous spot in the fourth apical cell. Legs yellowish-testaceous, fore and middle femora dorsally blackish-brown in the middle, fore and middle tibiae blackish-brown apically and basally.

Male. Sternites blackish, genital segments ochraceous.

Female. Pygophor ochraceous, ovipositor blackish.

Length (male) 5½-(female) 7¼ mill.

Hab. Viti Levu, Rewa (Mar.-Apr., M.).

Nesaphrogeneia gen. nov.

Allied to *Locris*, but is very feebly, if at all, carinate on the frons, and the pronotum is angularly emarginate at the base medianly. The head dorsally is much more obtusely and roundly angulate anteriorly. Pronotum and tegmina rugosely-punctured, apical three-fourths of the former and the head strongly declivous. Wing venation similar to that of *L. vestigans* and *amauroptera* as figured by Breddin.

1. *vitiensis* sp. nov.

Head, pronotum anteriorly, scutellum and body beneath, pale yellowish-brown; base of frons ventrally, antennae, last segment of labium dorsally, &c., dark fuscous or blackish-brown. Ocelli rubid. Rest of pronotum pale yellow. Tegmina pale yellowish-brown suffused with rosy, especially laterally and apically, with short, yellowish pubescence (especially on clavus); veins rosy, at least the lateral and apical ones; wing-veins dark fuscous. Legs pale yellowish-testaceous, tibiae more or less fuscous in part. Sternites more or less fuscate.

Length 5¾ mill.

Hab. Viti Levu, Rewa (Feb., Mar., M.)

Machaerotinae.

At the moment of going to press, I have received the first part of the 68th Vol. of the Stettiner Ent. Zeit., containing a review of this subfamily (*). The Australian genera may be disposed as follows:

1 Scutellum not sulcate; without an appendage.....(2)
1a Scutellum sulcate with an appendage...3 *Pachymachaerota.*
2 Vertex almost perpendicular, very short. Nymph cases elongate, subconical, more or less porrect, gradually widening from the base.....1 *Polychactophyes.*
2a Posterior margin of head raised. Ocelli farther apart. Frons more swollen. Pronotum less declivous, and longer in proportion to head. Nymph cases smoother and slenderer .....2 *Pectinariophyes.*

The first two have been omitted by Schmidt. In *Pachymachaerota* he places *Machaerota pugionata* and *signoreti* (=|| *pugionata* Sign.).

* E. Schmidt "Monographie der Subfamilie Machaerotinae Stal....." pp. 165-200, figs. 1-8 (May, 1907.)

Tetigoniidae.

Further investigation has convinced me that the subfamilies proposed in my former memoir cannot stand. Search has failed to reveal any sharply limited characters to form subfamilies. There is complete gradation from *Tetigonia* to *Eurymela* in the position of the ocelli and in the form of the leg spines. *Eurymela* is remarkably Cercopoid, especially apparently as regards the spines of the hind tibiae, but there is a fundamental difference. The spines in the Cercopidae are apparently solid, direct projections from the leg, and have no value for springing purposes, while in *Eurymela* and other allied forms, in which there are strongly developed, solid-looking spines, each of these always emits a hollow bristle, which is of value for springing in proportion to its length and to the number on the leg. The bristles in the more typical Tetigoniidae are also hollow and not direct productions of the leg, but socketed. The difference between the spines of *Tetigonia* and *Eurymela* is that in the former, the socket is small, the bristle long; in *Eurymela* the socket is large and the bristle short. [Pl. XI, figs. 18-20.]

For convenience, the following tribes based on habitus, are temporarily retained. I do not feel certain that, compared with the divisions of the Fulgoroid families, the Cicadoidea ought not to be divided into 2 families, Cicadidae and Tetigoniidae, the latter forming three subfamilies, Tetigoniinae, Cercopinae and Membracinae, but such a question is of minor importance, so long as the relative values of the divisions are understood.

1 Legs always more or less spiny or strongly bristly....(2)

1a Legs unarmed or feebly bristly.....(10)

2 Ocelli on the dorsal part of the head, distinctly away from its anterior margin.....(3)

2a Ocelli (if present) on the margin between vertex and frons; or dorsally, practically contiguous with the margin; or on the ventral side of the head.....(6)

3 Spines on the hind tibiae usually feeble except on one edge where they are strong, with rather short bristles. Stout forms, the head usually more or less laminate.....1 Ledrini

3a Bristles on the hind tibiae strong and long, not spinose. (4)

4 Exterior discoidal area of tegmen undivided up to the apical cells; ocelli on the vertex anterior to the apical margin of the eyes ..... 8 Macroceratogoniini

4a Exterior discoidal area divided, so as to form an apical cell ..... (5)

5 Elongate forms; ocelli basal of the anterior margin of the eyes, on the vertex.....10 Tetigoniini

5a Stouter forms; ocelli apical of the anterior margin of the eyes, on the vertex (Gyponidae auctt) .....9 Penthimiini

6 Vertex raised perpendicularly at the sides and base. Exterior discoidal area of tegmen undivided to the apical cells ..... 7 Iassini

6a Vertex not raised at the sides and base. Exterior discoidal area divided (in the long winged forms at least).....(7)

7 Head exceedingly declivous; ocelli on the vertex ventral of the bend of the head; spines and bristles on hind tibiae somewhat diverse in different forms..... .....(Bythoscopidae auctt) 3 Eurymelini

7a Vertex usually more or less porrect; ocelli (if present) on the angular margin of the head.....(8)

8 Radial, median and brachial veins very obscure basally, (apparently springing independently from the basal cell or uniting close to it, except *Aneono* and *Dialecticopteryx*); ocelli absent or feeble.....5 Eupterygini

8a Venation normal (except in short winged forms, or if obscure, then so all over); ocelli on the angular margin of the head, or touching it dorsally, rarely obsolescent.....(9)

9 Vertex strongly emarginate basally, ocelli in pits on the angular margin; legs spiny.....2 Stenocotini

9a Vertex rarely much emarginate basally, ocelli never in pits, (or if so, then the legs bristly, not spiny)..4 Phrynomorphini

10 Head laminate or at least elongately produced. Venation degraded .....6 Cephalelini (restr.)

10a Head never elongately produced, never laminate..... .....(incl. Kahavaluinae) 11 Megophthalmini

Tribe Ledrini.

This tribe is nearly always characterized as having a foliaceous pronotum, owing to the fact that *Ledra* is the only European genus and that the tribe is not represented in North America. It is characterized by the more specialized legs and by the dorsal position of the ocelli, but is not altogether natural. Some forms, e. g., *Rhotidus*, have a very close resemblance to Phrynomorphine genera such as *Annidion*, but are distinguished by the position of the ocelli.

Provisional Table of Genera.

1a Head broadly laminate.....(3)
2 Claval suture obsolete.....1 *Sichaca*
2a Claval suture distinct .....2 *Titia*
3 Pronotum with the lateral margins acute-angulately projecting ..... (4)
3a Pronotum not as above.....(5)
4 Pronotum anteriorly in the middle and head, perpendicularly declivous .....3 *Proranus*
4a Pronotum and head a little declivous.....4 *Tituria*
5 Eyes exteriorly margined by part of the vertex.....
.....5 *Betsileonas*
5a Eyes not margined exteriorly.....(6)
6 Hind tibiae dilated .....(7)
6a Hind tibiae cylindric.....(10)
7 Pronotum with a compressed auriform process sublaterally .....6 *Ledra*
7a Pronotum normal .....(8)
8 Vertex anteriorly truncate, basally with 2 flat, remote tubercles ..... 7 *Oclasma*
8a Vertex not truncate, without the tubercles .....(9)
9 Pronotum declivous .....8 *Platyhymna*
9a Pronotum not declivous .....9 *Ledromorpha*
10 Tegmina short ..... 10 *Dusuna*
10a Tegmina normal .....(11)
11 Tegmina reticulate apically .....(12)
11a Tegmina not reticulate .....13 *Ledropsis*
14 *Confucius,* 15 *Rhotidus,* 16 *Rubria.*
12 Pronotum laminately ridged .....11 *Jukarnka*
12a Pronotum not ridged .....12 *Camptelasmus*

Distant has overlooked the fact that *Petalocephala* is a synonym of *Camptelasmus.*

In the "Homoptera-Fauna von Ceylon," Melichar refers *Gypona striata* Kirby to *Siva* (=*Krisna*), and *G. prasina* Walker to *Acropona*, both Phrynomorphine genera. I cannot now refer to the types, which are presumably in the British Museum, but it was on a cotype of the former and a compared example of the latter, that I founded my genus *Eogypona* (1901 Entom. XXXIV, 38, inexplicably treated by Melichar as unpublished!) apparently a synonym of *Camptelasmus* (=*Petalocephala*), previously having renamed *G. striata*, "kirbyi," and *G. prasina*, "walkeri," on

account of their preoccupation.

Moreover, I do not think Melichar has correctly referred *Ledropsis*. I have not seen the types, but I believe that *Rhotidus* and *Rubria* are synonymous with this, or very closely allied. The nymphs of *Eogypona* (=? *Camptelasmus*) and *Rhotidus* (=? *Ledropsis*) are very different. The former are very flat, laminately foliaceous, and exceedingly thin, while the latter are not unlike the adults.

Rhotidus (=? *Ledropsis*).

The female ultimate sternite is very similar in all the species described by me. The posterior margin is slightly sinuate, with a small median notch which is almost obsolete in *ledropsiformis*. In *viridescens*, and *informis* it is obtuse-angled or somewhat rounded; in *horrendus* it is similar but more acute; in *monstrum*, *ingens* and *flavomaculatus* it is distinctly rounded.

Distant has described (1907 A. S. E. Belg. LI):

13. *aequalis* op. cit. 193. Queensland, and has transferred here *Ledra teliformis*, *navicula* and *cuspidata* Walker. This preoccupies the "*Rhothidus navicula*" of Stal, from Queensland, which is obviously not that of Walker; for the Stalian species, I propose the name of *stali*.

Ledropsis

Distant has described:

1. *froggatti* op. cit., 192..... New South Wales

Distant has also described:

Jukaruka (g. n.) *typica* op. cit. 190.....Queensland

In the list of unknown Australian forms, I omitted *Rubria sidnica* (*Xerophloea*) Stal 1859 Eugenie's Resa. Ins. 288(Sydney.)

Tribe Stenocotini.

This tribe differs from the Ledrini only in the position of the ocelli, which are situated in elongate pits on the margin connecting the vertex and the frons, and by the great emargination of the vertex basally. I know only three genera, all Australian, which have been analyzed on p. 368 of my former memoir.

Stenocotis (*).

1. *dimorpha* sp. nov.

Stenocotis planiuscula Kirkaldy 1906 Bull. H. S. P. A. Ent. I. Pl. XXV, figs. 4 and 8 (=male, not of Stal.).

Male. Whitish, tessellated with pale ferruginous and blackish-brown; frons pale with a longitudinal blackish median stripe widening out sometimes apically, sometimes basally. Underside and legs mostly black (hind tibiae sometimes brownish). Genital segments partly dark, partly pale. Tegmina hyaline, with the veins blackish and white alternately; the basal fourth blackish, closely spotted with testaceous and with some larger white markings; there is also a transverse dark band just apical of the middle. The apical veins are not reticulate.

Female. Pinkish-brown and yellowish-brown tessellated, or brownish and dark fuscous tessellated. Underside yellowish testaceous, nearly unicolorous. Tegmina nearly unicolorous (within range of ferruginous and yellowish) with semireticulate apical part. Ultimate sternite produced medianly, the produced part rounded posteriorly. Ovipositor much longer than the long pygophor which indeed extends distinctly beyond apex of tegmina.

Length 15 (male); 22-3 mill. (female).

Hab. Queensland, Bundaberg (Nov.) As it is just possible that these sexes do not belong to the same species, the male is selected as type.

N. B. In my former bulletin, p. 476, in the explanation of Pl. XXV, f. 4, for "female" read "male."

2. *reticulata* sp. nov.

Stenocotis planiuscula Kirkaldy, l. c., figs. 3, 6 and 7 (=female).

Females: like those of *S. dimorpha*, but with a slender longitudinal median blackish line on vertex; tegmina more reticu-

* Since this was in proof, I have received the 6th part of the A. S. E. Belg. LI (July 3, 1907) containing Distant's "Contributions to a Knowledge of the Ledrinae" (pp. 185-97.) He disputes my citation of *S. rittata* (=*depressa* Walker) and proffers instead *S. planiuscula*. I cannot accept this. In 1854 Stal founded *Stenocotis* for 2 species, *planiuscula* and *subrittata*. No type was mentioned and no comparison was made between the species. In 1856 Stal redescribed the genus and redescribed *subrittata*, figuring it. I hold that this fixes the type as *subrittata*; if not, *subrittata* is then the type, because I was the next author to deal with the genus and fixed it. The argument put forward by Distant, that *planiuscula* is the type because the first species mentioned by Stal, is worthless and inconsistent with Distant's own method in other cases. I was aware that Stal had cited *subrittata* as a synonym of *depressa* and quoted it as such on the next page, overlooked by Distant.

late apically. Pygophor almost as long as ovipositor, which is not longer than the tegmina.

Length 20 mill.

Hab. Queensland, Brisbane (June).

Distant has recently described.

S. nigrescens op. cit. 194, Queensland.

Smicrocotis.

1. *obscura*

Female ultimate sternite nearly truncate; pygophor almost as long as the ovipositor which scarcely extends beyond apex of tegmina.

2. *sidnica* sp. nov.

Similar to the type, but the vertex is very short, ascendant, rounded apically. Frons not longitudinally carinate in the middle. Pronotum not carinate. Testaceous (with a green tinge) tessellated with yellowish, pinkish-brown and blackish-brown. Face and sterna pale ferruginous-brown tessellated with blackish-brown and spotted with testaceous. Scutellum testaceous, tessellated with pinkish-brown. Tegmina hyaline tinged with cinereous, more or less feebly tessellated with dark and pale brown, veins pale ferruginous-brown, infuscate in parts, not reticulate. Legs subsanguineous, spotted with testaceous, femora more or less marked with blackish brown. Abdomen below blackish brown (except the apical margins very narrowly).

Length (male) 7½ mill.

Hab. New South Wales, Sydney, (Jan., K.).

This may be the male of one of the following species, but the non-carinate pronotum probably separates it.

Distant has described:

3. *pallescens* op. cit. 195, New South Wales.

4. *infuscata* l. c., Queensland.

5. *projecta* op. cit. 196, New South Wales.

Kyphocotis.

1. *tessellata.*

Female: ultimate segment like that of *Stenocotis dimorpha*, ovipositor extending somewhat beyond pygophor and a little beyond apex of tegmina.

Distant has described:

2. *fasciata* op. cit. 196, Queensland.
3. *parva* op. cit. 197, Queensland.

Tribe Eurymelini.

Although there is no sharply-drawn character separating this from the Phrynomorphini, it is convenient to reserve it for those forms in which the ocelli are actually ventral, that is apical, of the angulation of the head. It is in some of these forms that the frons is strongly demarcated from the vertex, though of course the "suture" is a false one and really only a deep impression in the chitin. At first I thought that this would prove a divisional character, but unfortunately it is only specific.

Provisional Table of Genera.

Trocnada and *Eurymeloides* are too vaguely diagnosed to admit of insertion. *Igerna* is probably near *Pediopsis*, but I do not now know the nature of the striation on the pronotum.

Strongylomma and *Melicharella* are known only by their descriptions.

1 Ocelli absent ..... 1 *Strongylomma*
1a Ocelli present ..... (2)
2 Tegmen with an appendix ..... (3)
2a Tegminal appendix absent, or if present, very minute and the head dorsally wider in the middle than at the sides (i. e. *Batracomorphus*) ..... (6)
3 Tegmina hyaline; appendix entire ..... (4)
3a Tegmina coriaceous, or at least the veins very strong; appendix not reaching beyond about half the length of the apical cells ..... (5)
4 At least one subapical cell in the tegmen..... 2 *Idiocerus*
4a No subapical cells ..... 3 *Pedioscopus*
5 Tegmina coriaceous, mostly dark with a white or coloured pattern, venation feeble ..... 5 *Eurymelias*
(=*Eurymeloides* Kirkaldy 1906, apparently not of Ashmead (*), type *hyacinthus* (Kirkaldy)
5a Tegmina subhyaline, dingily coloured, veins strong..4 *Ipo*

* Ashmead says "a double row of very weak spines," and cites no type.

6 A keel between the dorsal and ventral parts of the head .....6 *Melicharella*

6a No such keel .....(7)

7 Pronotum strongly striate obliquely .....(8)

7a Pronotum transversely striate, if at all (**).....(9)

8 Anterior margin of dorsal part of head almost rectangular; face flattish. (type *virescens*).....7 *Macropsis*

8a Anterior margin rounded; face convex (type *tiliae*).....8 *Pediopsis*

9 Ocelli immediately at the base of the ventral part of the head .....9 *Epipsychidion*

9a Ocelli well on the ventral part.....(10)

10 Tegmina reticulate apically. Frons angulate in profile, as also clypeus. Hind tibiae with 2 or 3 strong spines. Last ordinary sternite (female) bipartite.....(11)

10a Tegmina not reticulate apically. Frons not angulate in profile, nor clypeus. Hind tibiae multispinulose. Last ordinary sternite (female) not divided.....(12)

11 Last ordinary sternite (female) reaching the lateral margins of the abdomen.....10 *Eurymelops*

11a Last sternite not nearly reaching the lateral margins.....11 *Eurymela*

12 Lora not nearly touching the apical margin of the clypeus .....(13)

12a Lora practically touching the apical margin.....(14)

13 Frons separated basally; legs more or less specialized.....12 *Alsciss*

13a Frons not separated basally; legs normal.....13 *Oncopsis*. (=*Bythoscopus* auctt; type *flavicollis*).

14 Frons separated basally. Antennae inserted in a feeble cavity, their bases free.....(15)

14a Frons not separated basally. Antennae inserted in a deep cavity, beneath a ledge.....(17)

15 Pronotum transversely striate; nymphs not horned nor dorsally serrate. (type *sanguinolentus* Provancher).....14 (***) *Acratagallia*

15a Pronotum not striate; nymphs horned and serrate...(16)

16 Posterior margin of vertex regularly curved, the vertex being obsolescent behind the eyes. Nymph with two anterior

** Sometimes, in *Oncopsis*, the striation becomes a little oblique anteriorly.

*** These characters were pointed out and used for divisional purposes by Osborn and Ball in their treatment of *Agallia*. They are good genera, in my opinion.

projections on the head. (type *consobrina* Curtis=*puncticeps* Germ.) ..... 15 (***) *Agallia*

16a Posterior margin of vertex emarginate, but margining the eyes behind. Nymph with the entire posterior margin of the vertex elevated, truncate as seen dorsally. (type *novellus* Say) ..... 16 (***) *Agalliopsis*

17 Clypeus fused with frons.....(18)

17a Clypeus not fused with frons.....(19)

18 Face longer than wide.....17 *Nehela*

18a Face wider (between the eyes) than long..... ..... 18 *Thalattoscopus*

19 Pronotum reaching beyond the anterior margin of the eyes, first two wing veins apparently not confluent.....(23)

19a Pronotum not reaching as far as the middle of the eyes, first two wing veins confluent towards the apex.....(20)

20 Head dorsally wider in the middle than at the sides; a minute appendix close to apex of clavus....19 *Batracomorphus*

20a Head dorsally at least as wide at the sides as in the middle ..... (21)

21 Two subapical cells in the tegmen.....(22)

21a Three subapical cells..... 21 *Eurinoscopus*

22 Lateral keel of pronotum not reaching the eye, but curving far down onto the pleura. Head scarcely narrower than pronotum. Clypeus strongly convex, very broad at base, suddenly strongly narrowed beyond the middle to the rounded apex.... .....20 *Straganiopsis*

22a Characters not as above (=*Macropsis* auctt., type *lanio*.) ..... 22 *Bythoscopus*

23 Head dorsally angulate anteriorly, and angulately emarginate posteriorly. Pronotum sinuate posteriorly. Face about as long as wide between the eyes.....23 *Stonasla*

23a Head anteriorly lightly rounded. Pronotum truncate between the scutellar angles. Face much wider than long.... .....24 *Macrocepsis*

Idiocerus.

The venation in this large genus is very variable. The eleven Australian species are separable as follows:

1 Head spotted .....(2)

*** These characters were pointed out and used for divisional purposes by Osborn and Ball in their treatment of *Agallia*. They are good genera, in my opinion.

1a Head immaculate ..... (4)
2 Vertex with 2 spots ..... (3)
2a Vertex with 4 spots ..... 1 *kisseis*
3 Tegmina hyaline tinged with greyish or greenish; veins of corium sanguineous ..... 2 *nymphias*
3a Tegmina brownish fuscous, with two or three large translucent spots medianly ..... 3 *orcias*
4 Tegmina with a dark spot at junction of clavus and membrane and another at the apex of the basal part of the subcostal cell ..... 4 *orodemnias*
4a Tegmina with a longitudinal fuscous stripe ..... (5)
4b Tegmina immaculate ..... (6)
5 General colouring yellowish or orange ..... 5 *xantho*
5a General colouring creamy grey, sometimes rosy ..... 6 *hylcorais*
6 Tegminal veins clear; some at least sanguineous .... (7)
6a Tegminal veins more obscurely indicated; testaceous or pale greenish ..... (8)
7 More or less suffused with deep rosy, veins concolorous ..... 7 *cupido*
7a Veins mostly clear green, some of the apical ones sanguineous ..... 8 *ipo*
8 Length over 6 mill. ..... 9 *napais*
8a Length over 5 mill. ..... 10 *aulonias*
8b Length 4 mill ..... 11 *nereias*

1. *kisseis* sp. nov.

Head pale testaceous, vertex with 4 black spots, the larger pair visible dorsally and nearer the eye than their own diameter: apical of these a smaller pair, a little nearer together; between these 4 the vertex is sometimes suffused with rosy, the tint encroaching a little dorsally also. Pronotum greyish-rosy. Scutellum rosy with 3 testaceous spots, 2 anteriorly subcontiguous and one posterior. Tegmina pale olive testaceous, more or less greenish-iridescent, a little smoky at the base internally. Clypeus laterally sinuate, broader apically than at the base.

Male: tergites and valve more or less rosy, the latter transverse, sinuate.

Female: pygophor long, but much shorter than the ovipositor.

Length 5½ mill.

Hab. Queensland, Kuranda (Aug., P.).

N. B. The rosy hue may be entirely absent.

2. *nymphias* sp. nov.

Greyish testaceous, vertex ventrally with 2 small spots anteriorly, almost concealed by pronotum. Scutellum with 2 small wedge-like spots anteriorly, partly concealed by the pronotum. Veins of corium sanguineous (sometimes brownish).

Length 3½ mill.

Hab. New South Wales, Sydney (Jan., K.), Mittagong (Jan., K), Koebele's No. 2356, on *Melaleuca*.

3 *oreias* sp. nov.

Differs from the preceding by the brownish fuscous tegmina which have 2 larger and one smaller translucent spots at the middle in a transverse row, the innermost being on the clavus.

Length 3½ mill.

Hab. New South Wales, Mittagong (Jan., K.), in poor condition.

4 *orodemnias* sp. nov.

Form of *xantho*, but the base of the pronotum is slightly emarginate. Head, pronotum, scutellum and sterna greenish testaceous, much discoloured, especially on the head. Tegmina hyaline cinereous, a blackish or dark fuscous spot at junction of clavus, corium and membrane, and another at the apex of the basal part of the subcostal cell; veins greenish testaceous, partly suffused with dark fuscous. Legs greenish testaceous. Tergites dark fuscous at least laterally.

Female: last sternite subtruncate, pygophor pale reddish-brown, ovipositor dark.

Length 4½ mill.

Hab. Queensland, Kuranda (Aug., P.).

5 *xantho* sp. nov.

Head, pronotum, scutellum and sternites yellow or orange-yellow. Sterna and legs yellowish testaceous. Tegmina hyaline, subiridescent, tinged with cinereous, a darkish fuscous longitudinal stripe down the middle of the tegmen and a fuscous spot at the apex of the clavus.

Female: last sternite subtruncate.

Length 4-4¼ mill.

Hab. Queensland, Kuranda (Aug., P.).

6 *hylcorais* sp. nov.

Pl. II, figs. 1-2.

Like *aulonias*, but smaller and narrower; a somewhat elongate zigzag smoky line down the middle of the tegmina.

Female: last sternite subtruncate, slightly notched in the middle.

Length 4⅞ mill.

Hab. Queensland, Bundaberg (Sept.-Dec., K.).

7 *cupido* sp. nov.

Form of *xantho*. Head, pronotum, scutellum and underside pale yellowish often suffused with rosy. Tegmina pale yellowish testaceous suffused with rosy, veins rosy; subcostal cell, apical cells, apex of subapical cells and appendix, hyaline.

Length 3 mill.

Hab. New South Wales, Sydney (Jan.-Feb., K.).

9 *napais* sp. nov.

Pale testaceous, more or less tinged with green, immaculate. Eyes reddish-black. Tegmina hyaline, subcostal etc. greenish.

Male: pygophor long, narrow, apically acute, turned outwards a little.

Length 6½ mill.

Hab. Queensland, Bundaberg (Nov., P.).

10 *aulonias* sp. nov.

Close to *kisseis*, but pale creamy-grey in general colour, though it may be more or less rosy or reddish. There are no head spots.

Male: valve triangularly notched in the middle; pygophor broader than in the last, ovipositor not so long as in the last.

Length 5⅛ mill.

Hab. Queensland, Cairns (Aug., P.); Bundaberg (Sept.-Dec., K.).

11 *nereias* sp. nov.

Pale greyish-yellow, more or less suffused with orange, subiridescent. Eyes fuscous. Head and eyes much wider than, and strongly decumbent on, the pronotum, vertex dorsally about as

wide in the middle as at the eyes, gently rounded anteriorly. Frons rounded in profile, clypeus wider apically than at the base. Tegminal veins very feeble.

Female: last sternite slightly emarginate roundly.

Length 3¾ mill.

Hab. New South Wales, Sydney (Jan.-Feb), Parramatta (Jan. K).

12—sp. nov.

One immaturely coloured example from Mittagong (Jan. K) of a new species.

Ipo.

1. *ambita.*

Posterolateral margins of frons straight, ocelli at about the middle of each side; lora and clypeus touching the reflexed hind margin of the genae. First subapical cell longer than the second. All these details are very similar in *I. conferta.*

3. *honiala.*

Posterolateral margins of frons sinuate.

4. *aegrota*

Posterolateral margins of frons straight.

5. *pompais*, sp. nov.

Form of *I conferta* but smaller and paler. Pale testaceous, strongly, minutely and closely spotted with brownish fuscous; frons (and usually a thin longitudinal line from frons to base of pronotum) pale testaceous. Scutellum pale ferruginous, antero-lateral angles dark fuscous. Tegmina hyaline tinged with cinereous, suffused and mottled with light and dark fuscous; an undulating transverse narrow whitish stripe near the middle; extero-apical part of tegmina almost immaculate, one or two whitish spots near the commissure. Beneath brownish testaceous. Head nearly truncate anteriorly. Eyes projecting laterally distinctly farther than the pronotum.

Male: last segment roundly emarginate, pygophor subconstricted near the base.

Length 5 mill., breadth 2½ mill.

Hab. Queensland, Nelson (July P).

Macropsis.

Macropsis Lewis 1835 T. E. S. London I. 49 (div. A.)
=*Pediopsis* auctt. (part).

The four Australian species may be separated as follows:

1 Only two subapical cells (the third being merged in one of the apicals) ..... 1 *ocroe*

1a Three regular subapicals ..... (2)

2 Tegmina pale, unornamented ..... 2 *thymele*

2a Tegmina with many dark markings ..... (3)

3 Face evenly rounded; pronotum immaculate except for the punctuation ..... 4 *thoantias*

3a Face unevenly raised in parts; pronotum with a sublateral dark line ..... 3 *thyia*

1. *ocroe*, sp. nov.

Head, pronotum and scutellum pale ochraceous, closely and finely punctured with purplish-brown. Tegmina hyaline, pale yellow brown, veins (except the subcostal) dark fuscous, multiannulate with whitish, apical cells and tergites more or less fuscate. Sternites paler. There are only 2 subapical cells; the 1st apical is very small and the second is long, touching the base of the first subapical. (This is a constant character in 8 specimens).

Length 3½ mill.

Hab. Queensland, Kuranda (Aug., P.), Nelson (July P.).

2. *thymele*, sp. nov.

Close to the last but the punctures are fainter, and the anterior half of the pronotum is lightly keeled or at least there is a smooth line there. Tegmina pale yellowish hyaline, nervures weaker, concolorous, a fuscous speck at apex of sutural cell, another at apex of clavus; a transverse vein in the subcostal, and the 1st subapical vein, &c., fuscous. There are three subapical cells.

Length 4 mill.

Hab. Queensland, Bundaberg (Sept.-Dec. K).

3. *thyia*, sp. nov.

Resembles the first, but more ornate and there is an entire smooth line on the pronotum. The face, unlike the 3 others, in which it is regularly rounded, is unevenly raised or ridged in

parts. Pronotum with a curved broken longitudinal blackish-brown sublateral line. Tegmina hyaline, strongly punctured with fuscous, the punctures rendering the clavus and base of corium opaque; an irregular band across the tegmina and the apical sixth dark greyish-fuscous, veins fuscous multiannulate with whitish. Legs testaceous closely speckled with fuscous, tibiae multiannulate with whitish. There are 3 subapical cells.

Length 3½ mill.

Hab. Queensland, Kuranda (Aug.P).

4. *thoantias*, sp. nov.

Resembles the last, but the face is not ridged and the pronotum is immaculate with dark punctures. Tegminal pattern more obscure, a dark line across the base. There are 3 subapical cells.

Length 3½ mill.

Hab. New South Wales, Sydney (Jan. K).

Epipsychidion.

According to the horismology now used, the tegmina have 3 subapical and 4 apical cells, and the subcostal is divided apically by an oblique vein.

1. *epipyropis.*

(Bull. I p. 346, Pl. XXIII, figs. 4-6.)

Female. The second subapical cell extends further apically than the others. Last sternite truncate. The figure of the adult (fig. 4) does not show the crossveins.

Male. What is probably the male of this species has a rounded head, a little longer at the eyes than in the middle. Pale yellowish testaceous, mottled and spotted rather obscurely with pale brownish cinereous, veins not annulate. Vertex and pronotum without black lines, but with traces of pale longitudinal lines. Last sternite roundly emarginate, plates elongate.

Length (males) 5¼ (females) 6½ mill.

Bred from nymphs on *Leptospermum.*

Alsceis gen. nov.

Vertex very declivous, dorsally very short, wider laterally than in the middle; eyes touching the base of the tegmina. Frons

suboval, basally extending beyond the apical margin of the vertex; antennal ridges straight, entire, nearly as wide as frons. Vertex and pronotum transversely striate. Ocelli on a line with the insertion of the antennae and the base of the frons, not touching the latter.

1. *osborni,* sp. nov.

Whitish-testaceous, very finely mottled with brown, spotted with dark fuscous, a large suffused fuscous inverted arrow on anterior part of pronotum. Tegmina irregularly mottled and spotted with fuscous. Fore and middle legs blackish-brown, obscurely spotted with pallid; hind legs fuscous, obscurely marked with darkish.

Length (female) 8¾ mill.

Hab. Queensland, Brisbane (June P), Kuranda (July P).

Oncopsis.

Oncopsis Burmeister 1838 Gen. Ins. I, Bythoscopus, 3rd page. =*Bythoscopus* auctt.

1. *balli,* sp. nov.

Bright yellow, closely punctured with brown on head and pronotum. There is a laevigate horse-shoe mark on the face near the clypeus, broken at the base, and there are 2 smooth pits nearer the base of the face. There is also a small smooth area on the pronotum on each side anteriorly, and the striation is fine and somewhat reticulate. The scutellum is punctured closely only on the disk. Apical margins of clypeus and genae, marks on legs, sterna, &c., blackish. Tegmina cinereous hyaline, a blackish smudge near the base, veins strong, yellowish brown, sometimes blackened.

The head is not visible dorsally, except close to the prominent eyes, nor is the anterior margin of the pronotum visible.

Length 5 mill.

Hab. Queensland, Bundaberg (Sept.-Dec, K.).

I have great pleasure in naming the last two species after Professors Osborn and Ball ,whose work, conjointly or separate, on the Homoptera, especially the genera *Deltocephalus, Agallia,* &c., forms a model for future research.

Eurinoscopus.

The Australo-Fijian species may be disposed as follows. This is a very difficult genus and I have been unable to deal satisfactorily with several specimens, including Muir's Nos. 112 and 157; the latter were off native trees and were heavily stylopized.

1 Pronotum and tegmina freckled with brown.....(2)
1a Pronotum, at least, immaculate.....(4)
2 Face spotted with black, tegmina strongly freckled.....1 *lentiginosus* (Pl. II, figs. 7-8)
2a Head immaculate, tegmina more faintly freckled....(3)
3 Smaller, darker, frons less flat, &c.....2 *sontiates*
3a Larger, paler, frons flatter .....3 *soboles*
4 Tegmina cinereous, punctured with brown..8 *hamadryas*
4a Tegmina yellowish or green .....(5)
5 Tegmina with brown freckles.....4 *dryas*
5a Tegmina not freckled .....(6)
6 Uniform pale brownish yellow .....7 *pelamys*
6a Bright green, head and scutellum, &c., often yellowish (7)
7 Head dorsally as wide laterally as in the middle..5 *pelias*
7a Head dorsally distinctly wider in the middle than laterally ..... 6 *molestia*

8. *hamadryas,* sp. nov.

Cinereous, lora and clypeus often infuscate. Pronotum usually clouded with fuscous, the posterior angle usually broadly blackish. Tegmina with fuscous veins and obscure fuscous puncturation. Legs more or less fuscous.

Length 4¼-4½ mill.

Hab. Viti Levu, Rewa (March & Nov. M).

Tribe Phrynomorphini.

The genera in this are very hard to limit and define, and they are not always altogether natural. It is probable that future classifications will be based largely upon nymphal characters. A number of groups may be formed, but cannot be altogether satisfactorily limited, for instance, the genera with the anterior margin of the vertex deeply and completely channelled transversely, merge gradually into those with simple head; these again merge into those with foliaceous or acute anterior margin of the vertex.

The venation is also often irregular, the characterization of the *Deltocephalus-Phrynomorphus-Thamnotettix* group being in especial confusion. The extra-Oceanian material at hand for comparison being entirely inadequate, I have preferred not to make more new genera than could be helped; at the same time it is doubtful whether the recognized authorities on Cicadoidea (for instance, Osborn, Ball, Van Duzee, or Melichar) would accept the generic positions I have assigned to some of the species, or would agree among themselves. The difficulty of sharply limiting these genera is evident from the synonymy of several species, according to these various authors, during the past twenty years, ex. gr. *Deltocephalus osborni, Athysanus seminudus, Limotettix striola,* and *Thamnotettix striatula.*

The study of the Phrynomorphini is not lightly to be undertaken, but, more necessarily perhaps than in any other Cicadoid group, the known species of the world must be revised by some competent Hemipterist. It would be an immense advance in the knowledge of the group, if Osborn & Ball, whose studies on the North American forms have formed a model for future work, would undertake this task. The nymphs usually present very important specific characters, as these authors have shown, but in some genera at least, the number, colour, and disposition of the abdominal bristly hairs is specifically very valuable, a character neglected up to the present.

Stegelytra.

It is evident that two quite different genera are confused under this name; they may be separated as follows:

(a) Vertex anteriorly rounded, angulate in profile; pronotum anteriorly arched, posteriorly slightly emarginate. Tegmina with 2 subapical cells .....*Stegelytra* (type *alticeps.*)

(b) Vertex anteriorly subangulate, almost porrect in profile; pronotum anteriorly truncate or subtruncate between the eyes, posteriorly truncate between the scutellar angles. Tegmina with 4 subapicals, apicals reticulate.....*Iberia* nov. (type *bolivari*).

Thomsonia.

3. *kirschbaumii.*

Add to localities: Bundaberg (Sept.-Dec., K.).

Hybrasil gen. nov.

Closely allied to *Thomsonia*. Head strongly and completely channelled on top, clypeus somewhat constricted at base. Pronotum regularly roundly arched anteriorly. Tegmina with 2 subapical cells and 5 apicals, the first being in a line with the subapicals, the fifth very large. Valve present in the male.

1. *brani*, sp. nov.

(Pl. II, fig. 18).

Male: vertex, pronotum, scutellum, antennae, legs and pleurites pale yellowish green, including the channel on the top of the head; frons and a very narrow border on the vertex basal of the channel, sterna and abdomen, black. Tegmina pale smoky-yellowish, hyaline, with a median smoky smudge down the middle; veins more or less suffused with fuscous, except the pallid subcostal, radial and claval veins. Wings smoky, veins dark. Valve very short, plates pale, together triangular, then suddenly acuminate and produced apically, not as long as pygophor.

Female: head entirely pale yellow, except for 2 narrow black lines on either side of the channel. Underside pale yellow. Tegmina less fuscate than in the male. Seventh segment truncate, pygophor broad, not as long as ovipositor.

Length (male) 4½ (female) 6 mill.

Hab. Viti Levu, Rewa (Mar. Muir).

Dryadomorpha.

In the unique type of *D. pallida*, it was not possible to interpret the obscure venation, but apparently there were no cross veins in the subcostal. Mr. Muir has collected a species at Rewa which I place here. The venation is somewhat like that of *Platymetopius*; there are two discoidals, the medians being nearly twice as long as the exterior and extending beyond it basally and apically; there are 5 or 6 cross veins towards the apex of the subcostal, and 5 apical cells and an appendix. The wing cells are also peculiar.

2. *lotophagorum*, sp. nov.

Greenish-yellow, head and pronotum more or less mottled with light fuscous, some more regular, rather darker, spots on the

lateral margin of the vertex anteriorly and on the lateral margins of the frons. Tegmina pale yellowish hyaline; interior half, obliquely, of membrane, and the appendix, pale smoky; apical vein sordid whitish; three dark fuscous spots on the commissure; apex of last apical cell acute, with a smoky spot. Legs pale brownish testaceous, speckled with black granules. Sternites greyish-fuscous. Lateral margins of pronotum acuminate behind the eyes.

Male: last segment very slightly roundedly emarginate.

Female: last segment obtuse-angulately emarginate medianly; pygophor rather swollen laterally in the middle, flattish.

Length 6-7 mill.

Hab. Viti Levu, Rewa (Mar.-Apr. Muir).

Tortor gen. nov.

Probably allied to *Dryadomorpha;* the vertex is however not depressed and is more rounded anteriorly.

Vertex flattish, slightly raised towards the middle from the lateral margins, about as long as wide across the small eyes, lateral margins converging anteriorly, apical margin roundly angulate. Frons concave, raised laterally, clypeus more or less fused, lora minute. In profile the head is thin, the lateral margins are flattened, narrowing apicalwards: ocelli very indistinct rudiments on this flattened part, at about half the length of the head. Pronotum transverse, about three-fourths the length of the vertex, longer than the scutelium. Tegmina elongate, subcoriaceous, veins very indistinct; the radial appears to be undivided almost till the apex of the tegmina, while the median is joined to cubital at least 5 or 6 times by short, transverse veins.

1. *daulias*, sp. nov.

Pale golden yellow. Eyes greyish.

Length 9 mill.

Hab. Queensland, Bundaberg (Sept.-Dec.).

The nymphs are not remarkable, being in general form and colour like the adults.

Tartessus.

This is evidently a large genus, as 15 species are now known from Australia alone. The forms described form three groups:

(a) Veins of tegmen dark multiannulate with white; *T. ianassa.*

(b) Veins unicolorous yellowish or brownish, sometimes more or less fuscate, divided into:

(c) face wholly, or in large part, blackish; *T. io, iphis,* and *fulvus* (part).

(cc) face wholly, or in greater part, pale; *T. iancira, ianthe, iambe, io, iphis, issa, itonias, idyia* and *fulvus* (part).

1. *fulvus.*

Bythoscopus fulvus Walker 1851 List. Hom. 866
Tartessus australicus Spangberg 1878 O. V. A. F. XXXV, 1.
T. fulvus Signoret 1880 A. S. E. France 348 Pl. 9 fig. 74.
var. *T. syrtidis* Kirkaldy 1906 Bull. H. S. P. A. Ent. I, 341 Pl. 24 f. 9.

This is a variable species; a single female from New South Wales, Sydney (Jan.) seems to agree with Signoret's description and figures, except that the eyes in Signoret's figure of the insect, are represented as not very decumbent on the pronotum and far from contiguous with the base of the tegmina. Beside this there are 4 males (not females, as wrongly stated in the description) of the var. *syrtidis,* a series of males and females very like the type, but differing in the colouring of pronotum, &c., (i. e., the presence of 5 or 6 brown spots along the anterior margin) and in the colour and pattern of the frons; it is unnecessary to bestow on them a varietal name. The figure of the face (l. c., Pl. 24, f. 9) of var. *syrtidis* gives a false impression (and refers rather to the type) as the whole of the face is black except narrow lines on the frons, and the antennae. The venation varies very little, sometimes there are 2 or 3 crossveins in the sutural area, sometimes these are absent. Subcostal cell divided by a somewhat oblique transverse vein about the middle, a little variable, of the first subapical (sometimes by 2 close together.) The 3 subapical cells extend apically about equally far.

Hab. New South Wales, Sydney (Jan.); Queensland, Cairns (Aug.).

var. *syrtidis,* Bundaberg (type, Oct.) Cairns (July) and Sydney (Jan.) bred from *Eucalyptus,* on Sandhills.

The genitalia appear identical in these forms, nevertheless I should have retained *syrtidis* as a good species, had not Dr. Perkins taken a male with a female of the second variety and a male

of the second variety with a typical female *fulvus*. It is exceeding common, and is one of the few leafhoppers that can be considered as a pest of *Eucalyptus*. It is parasitized extensively in the ova-stage by *Pterygogramma acuminata* and as an nymph by *Chalcogonatopus gigas*. Nymphs of this or an allied form are parasitized by *Prosanteon chelogynoides* and *Pipunculus picrodes* and *cruciator*.

2. *idyia*, sp. nov.

Black; base of vertex and basal half of posterolateral margin of scutellum, pale yellow; a narrow line on the genae contiguous with the lateral margin of the frons, a similar one on the pronotum contiguous with the posterior margin of the eyes, a tiny wedge at anterolateral angles of scutellum, pale ferruginous; labium, fore and middle legs (except basal two-thirds or more of femora) testaceous. Tegmina subhyaline, tinged with ferruginous, veins (somewhat suffusedly in most of them), median third or more of subcostal cell, blackish; basal two thirds of antesubcostal cell, whitish subhyaline. Vertex rounded apically, strongly striate transversely, formed as in *T. fulvus*, but a little more prominent anteriorly. Eyes as in *T. fulvus*. Frons basally strongly striate transversely, apically aciculate punctate. Genae with the apical margin less oblique than in *T. fulvus*, and clypeus shorter than in that species. Tegminal venation much as in *T. flavipes* but the cross-vein on the brachial near the base, and that towards the apex of the subcostal cell, are straight, not oblique; there are no cross veins in the clavus. Second subapical cell extending apically beyond the others.

Male: genital segments apparently much as in *T. pulchellus* but in all the specimens they are rather shrivelled.

Length 5½ mill.

Hab. Queensland, Nelson (July) type, Cairns (Aug.).

3. *itonias*, sp. nov.

Apparently allied to *T. pulchellus*, but differing by the form of the genitalia and by the vertex being obtuse-angular. Face immaculate, borders of the pieces rather more obscure, lateral margin of frons fairly straight. Sterna and sternites testaceous. Venation similar to *pulchellus*, but the median (inner discoidal) cell is longer, the crossvein in the subcostal straight; the first

subapical cell is very wide apically, consequently the apical part of the subcostal is very narrow and acute; subapical cells extending about equally far apically.

Length (male) 8¾ mill.

Hab. Queensland, Cairns and Kuranda (Aug.).

4. *issa,* sp. nov.

Superficially like the preceding but the vertex is roundly angulate and wider at the eyes than in the middle. Appendix to tegmina about as large, faintly smoky narrowly bordered inwardly with hyaline. Subcostal cell much wider and is subparallel beyond the transverse vein, apical margin oblique. Subapical cells extending about equally far apically.

Male: tegmina slightly suffused, veins partly dark. Genital segment not unlike *T. flavipes*, but slenderer and more elongate.

Female: tegmina not suffused, veins pale. Genital segments elongate, slightly, obtuse-angularly produced in the middle; pygophor elongate, but much shorter than the ovipositor.

Length 6 (male) 8½ (female) mill.

Hab. Queensland, Nelson (July) Kuranda and Cairns (Aug.).

In a female from Kuranda the crossvein at the base of the inner subapical vein is absent on both tegmina.

5. *iphis,* sp. nov.

Male: vertex luteous, suffused (except basally) with sanguineous. Frons pale luteous suffused with sanguineous, a curved blackish band contiguous to the apical margin of the basal part of the frons; median third of length suffused with fuscous, with curved concentric fuscous lines extending over the yellowish-red ground colour. Genae (excluding a part of the apical margin very narrowly), clypeus and lora blackish. Pronotum and scutellum (except posterior third of latter which is paler) orange-yellow. Tegmina pinkish brown, veins somewhat fuscate, some of them dark fuscous; commissure blackish; apex of apical cells (except the first sometimes) and the appendix, smoky. Sterna and sternites blackish or subsanguineous. Fore and middle legs testaceous, hind pair blackish. Head rounded in front, frons basally and pronotum strongly striate transversely, frons aciculate. Crossvein on brachial sometimes absent; second subapical cell extending beyond at least the third; subapical crossvein oblique.

Female: like the male, but the vertex (excluding the pale greenish or luteous basal margin) is bright redbrown; face black except a small redbrown line on the genae on each side of the frons. Sterna and sternites mostly blackish. Pronotum and anterior two-thirds of the scutellum bright redbrown. Legs testaceous; fore coxae and hind coxae and femora blackish, hind tibiae subapically more or less widely fulvous or pallid. Tegmina dull ferruginous, hyaline subapically, marked as in the male. Last abdominal segment produced, apically subangular, ovipositor a little longer than the pygophor.

Length (male) 7, (female) 7½ mill.

Hab. Queensland, Nelson (July, type) Kuranda and Cairns (Aug.).

6. *io*, sp. nov.

Allied to *T. iphis*, but more robust and with different colour and pattern.

Head, pronotum and scutellum sordid yellowish, frons with a longitudinal submedian dark fuscous fascia (uniting basally acutangularly) with transverse, curved fasciae; sutures very narrowly, base of genae around insertion of antennae, clypeus apicolaterally, sterna and sternites mostly, dark fuscous or blackish. Tegmina pale ferruginous; hyaline, sublacteous on subcostal cell apical of the crossvein, and across the tegmina interiorly in the middle; veins mostly dark fuscous. Legs testaceous, base of femora (and the hind tibiae more or less) fuscous. Vertex scarcely rounded, wider at the eyes than in the middle. Frons elongate, lateral margins sinuate; clypeus strongly carinate. Pronotum strongly striate. Crossvein on brachial nearly straight, on subcostal oblique. Second subapical cell extending apically beyond the others.

Female: genital segments black, much as in *T. fulvus*, but last sternite more acute apically.

Length (male) 6½ (female) 7¼ mill.

Hab. New South Wales, Mittagong (Jan. K).

7. *iambe*, sp. nov.

Allied to the last, but stouter and not so elongate; paler, tegmina milky cinereous, immaculate, except an obscure fuscous spot in some of the cells, veins fuscous, apex of tegmina

infuscate. Second subapical cell extending beyond the others apically; crossvein on brachial, nearly straight, in subcostal cell, oblique.

Male: pygophor pale ferrugineo-testaceous, with blackish bristles; plates elongate, apically acute.

Female: pygophor coloured as in the male, formed as in *T. io*, but not nearly so acutely or far produced in the middle.

Length 6-7 mill.

Hab. New South Wales, Mittagong (Jan. K).

This might be confused with *T. io*, but the stouter form and different genital segment abundantly distinguish it.

8. *ianthe*, sp. nov.

Pale sordid yellowish; vertex, pronotum and anterior two-thirds of scutellum closely spotted with pale yellowish, these spots being clearly but not deeply punctured. Face pale yellowish, obscurely marked with brownish. Pronotum and scutellum fuscate (sometimes the former on the disk only). Tegmina pale yellowish hyaline, immaculate, basal veins pale, apical ones subferruginous, appendix fuscate. Sterna and sternites mostly pale. Tergites blackish along the middle, pale laterally. Head rounded, nearly as long in the middle as laterally. Crossveins on brachial vein and in subcostal cell, straight; subapical cells extending apically about equally far, or the third not quite so far as the others; subcostal cell apical of the crossvein subparallel laterally, apically oblique.

Male: valve practically obsolete, plates not unlike *flavipes*.

Female: genital segments fulvescent above ,varyingly coloured beneath; last sternite strongly produced, apically acute, strongly carinate longitudinally, pygophor elongate (with yellowish bristles), about as long as the ovipositor.

Length (male) 8- (female) 11 mill.

Hab. Queensland, Brisbane (June), Cairns (July-Aug.).

9. *ianassa*, sp. nov.

Female: form of the last, but vertex more emarginate basally without being more produced anteriorly. Head, pronotum and scutellum marmorate with yellowish-white, pale yellowish-brown and brownish, paler on frons. Legs pale, femora and tibiae annulate with brownish. Tegmina yellowish brown, veins

concolorous, crossveins suffused with dark fuscous; longitudinal veins (except subcostal and commissure), multiannulate with dark fuscous, appendix fuscate. Crossveins on brachial vein and in subcostal cell, oblique, the apical part of the subcostal apically elongate and acute, reaching nearly to the apex of tegmina; second subapical cell extending apically farther than the rest. Last sternite nearly truncate, pygophor elongate (with brownish ferruginous bristles), about as long as the ovipositor.

Male: narrower than the other sex. Pronotum not marmorate, brownish yellow with pale, subpunctate spots. Face nearly immaculate (except base of frons), legs almost so. Genital segments not unlike those of *Sarpestus speculatis* in form, except that the apical margin of the last sternite is wider.

Length (male) 8- (female) 9½ mill.

Hab. Queensland, Cairns (July-Aug.).

10. *iancira*, sp. nov.

Allied to *T. iambe*. Pale yellowish brown, scutellum often tinged with ferruginous. Second subapical cell extending apically beyond the others. Crossveins on brachial and in subcostal fairly straight.

Male: sterna and sternites somewhat fuscate; face almost immaculate; genital segments not unlike those of *T. subniger*.

Females Frons with a submedian pale fuscous longitudinal line with transverse striae. Sterna and sternites pale; last sternite produced, apically acute-angled, pygophor elongate with yellowish-brown bristles.

Length 7 mill.

Hab. New South Wales, Sydney (Jan.-Feb. K), Parramatta (Jan. K).

11. *iokaste*, sp. nov.

Not unlike *T. ianthe*, but smaller, tegmina more pointed apically, head more angulate, &c. Pale sordid yellowish-brown, obscurely suffused here and there with green and sanguineous. Pronotum obscurely spotted. Veins sometimes dark fuscous, sometimes subferruginous. Vertex obtuse-angular anteriorly, longer at eyes than in the middle. Vertex, base of frons, and pronotum transversely striate. Second subapical, cell extend-

ing apically a little beyond the others. Crossveins on brachial vein nearly straight, oblique in the subcostal cell.

Male as in *T. ianassa*.

Female: last sternite straight apically, medianly rather deeply notched; ovipositor long, a little longer than pygophor.

Length 8 mill.

Hab. Queensland, Cairns and Kuranda (Aug.).

The following four species, unknown to me, have been described from Australia:

12 *T. subniger* Signoret, 1880, A. S. E. France (5) X 350, Pl. IV, f. 75 (*male genitalia*).

13 *T. sahlbergii* Signoret, op. c., 351, Pl. IX, f. 76.

14 *T. flavipes* Spangberg; Signoret 1880 op. c., 360, Pl. X, f. 85 (Tasmania).

15 *T. pulchellus* Spangberg; Signoret 1880 op. c., 362 Pl. X, f. 87.

Thymbris gen. nov.

Allied to *Tartessus*, but the vertex is convex and although sharp anteriorly, is not channelled as in the latter. Head and eyes wider than the pronotum; ocelli nearly as far from apex of dorsal part of head as from eyes, on the extreme margin of the head just on the dorsal side, but owing to the declivity of the vertex, is not visible when the insect is horizontal. Eyes not touching base of tegmina. Vertex and pronotum striate transversely. Tegmina narrowed posteriorly, without an appendix.

1. *inachis*, sp. nov.

Pl. II, figs. 19-20.

Female: vertex, pronotum, scutellum and tegmina whitish testaceous mottled with brownish. Beneath obscure testaceous. Veins dull ferruginous-brown, multiannulate with whitish. Fore and middle femora and tibiae annulate dorsally with brownish. Vertex nearly rectangular medianly, longer than at the eyes. Frons elongate, tempora wide, antennal ridges strong. Labium reaching to the base of the middle coxae. Second subapical cell extending apically well beyond the others. Transverse veins on brachial and in subcostal cell, oblique, apical

part of the latter apically acute-angled. Last sternite truncate, transverse, pygophor flattened basally, reaching a little beyond apex of tegmina, not so long as ovipositor.

Male: (of this species?) Head slightly roundly-angulate anteriorly, a little wider at eyes than in the middle. Last segment roundly emarginate, valves about twice as long, elongate triangular.

Length (male) 8- (female) 11½ mill.

Hab. Queensland, Brisbane (Nov., type), Bundaberg (Sept.-Dec., males, female).

2. *iphianassa*, sp. nov.

Male: allied to the last, but differs as follows:

Extreme base of frons pale yellowish white, bordered apically with blackish, narrowly. Tegmina not mottled, immaculate, veins more sparingly annulate with whitish. Legs not annulate. Vertex distinctly angulate, a little wider in the middle than at the eyes. Labium reaching to apex of middle trochanter. Last sternite dark fuscous, truncate, about one-fourth or one-fifth of the length of the pygophor, which widens out a little apically.

Length 8½ mill.

Hab. New South Wales, Sydney (Jan.)

Putoniessa, gen. nov.

Vertex very short, rather longer at the eyes than medianly; margin between this and frons angulate, but the top is actually thickened and a little flattened, an obscure transverse, ventral keel at about the middle of the eyes, apparently forming the limit. The ocelli are on this thickened and flattened part, about as in *Thymbris*, and although ventral in aspect, are I think, on the "vertex." Frons narrow, elongate. Tempora wide, antennal ridges rather strong. Vertex and pronotum transversely striate. *Clypeus and genae strongly angulate, the apical part declivous.* Venation as in *Thymbris*, but the apical part of the subcostal cell is longer and reaches the apical margin of the tegmen.

1. *dignissima*, sp. nov.

Pale greyish cinereous mottled with fuscous. Face pale testaceous, frons and clypeus mostly dark fuscous, with pale

specks. Tegmina hyaline, tinged with cinereous, mottled with light and dark fuscous; veins brownish, crossveins mostly whitish. Femora blackish, at least basally and dorsally, fore and middle tibiae annulated with dark fuscous at least dorsally. Sternites dark fuscous, apically bordered with testaceous, narrowly.

Length $8\frac{1}{2}$-$9\frac{1}{2}$ mill.

Hab. New South Wales: Mittagong (Jan. K).

This form is a complete link between the "Jassidae" and the "Bythoscopidae" and points the way to the Stenocotinae. It is a melancholy satisfaction to name this in honour of the venerable Dr. Puton, on whom affliction has fallen so heavily.

Xestocephalus.

Xestocephalus Van Duzee 1892 Tr. Amer. Ent. Soc. XIX 298.

A genus noted from America, Ceylon and Japan; I now add two species from Australia and three from Fiji.

Van Duzee has placed it near *Aphrodes*, but he has I think been led astray by the degradation of the wing-venation, which could surely arise independently. Its place seems to me to be near *Phrynomorphus*.

1. *viticnsis*, sp. nov.

Pale yellowish brown, eyes dark fuscous. Tegmina irregularly, brokenly fuscomarmorate, 2 dark spots on the subcostal vein, one near the base and one near the apex of the clavus; one or two of the apical veins suffused at their apices. Wings hyaline, iridescent, veins pale yellowish brown. Subapical cells of tegmen all quadrilateral or 5-hedral, none triangular, the interior cell a little the smallest, exterior slightly smaller than the middle one. Submarginal wing-vein absent on the first fold of the wing.

Female: 7th segment obtuse-angularly emarginate; pygophor rather short, nearly as long as the ovipositor, with pale bristles.

Length 5 mill.

Hab. Viti Levu, Rewa (Mar., Muir).

2. *pallidiceps*, sp. nov.

Yellowish-brown, paler beneath. Tegmina yellowish hyaline, faintly marked with pale cinereo-fuscous, the exterior fourth

with 2 or 3 darker transverse lines and the apical margin pale smoky. Wings hyaline, faintly smoky, veins pale.

Male: last segment apparently roundly emarginate, valve scarcely apparent, plates elongate with concolorous bristles.

Length 2⅞ mill.

Hab. Viti Levu, Rewa (Mar., Muir).

contortuplicatus var. nov.

Like the type, but there is a double line of warm brown from mid-vertex to mid-scutellum, lateral contortuplicate lines of the same colour on pronotum and two blackish brown transverse lines on anterior margin of head. Tegmina rather more marmorate.

Hab. Viti Levu, Rewa (Mar.-Apr., Muir).

decemnotatus var. nov.

Pronotum with 10 white spots. Tegmina as in *contortuplicatus*.

Hab. Viti Levu, Rewa (Apr., Muir).

These varieties may prove to be good species, but I have seen only a single example of each.

3. *australensis*, sp. nov.

Like the last, but larger and yellower; tegmina with sparse brownish markings.

Length 3½ mill.

Hab. Queensland, Kuranda and Cairns (Aug. P).

4. *purpurascens*, sp. nov.

Head and eyes pitchy brown with a purple tinge, inner orbits narrowly pale. Ocelli pale, very conspicuous. Pronotum and scutellum dark ferruginous brown with a purple glint. Tegmina warm brown with a purple glint, a few irregular pale spots and specks, not corresponding on opposite tegmina. Wings pale smoky, veins fuscous. Labium and fore coxae pale, rest of legs mostly pale fuscous, hind tibiae purplish pitchy. Sterna sordid testaceous. Abdomen purplish pitchy.

Female: pygophor with yellowish brown bristles; last segment notched in the middle.

Length 3 mill.

Hab. Viti Levu, Rewa (Apr., Muir).

5. *sidnicus,* sp. nov.

Blackish-brown; legs pale brownish-testaceous, the hind tibiae with a blackish apical annulus and the apical half of the first and the whole of the second segment of the hind tarsi blackish. Tegmina fuscohyaline, veins blackish, 2 or 3 thin, curved transverse, fuscous lines on the apical fourth of the tegmina. Ocelli orange-brown. Vertex roundly angular in front, one-half longer in the middle than at the eyes.

Length (male) 3¼ mill.

Hab. New South Wales, Sydney (Jan., K.).

Eutettix.

1. *sellata.*

Matsumura (1905 Tr. Sapporo N. H. S., I, 20), thinks this is a synonym of *Acocephalus disciguttа* Walker, a hazardous proposal without seeing the type. Walker's species was from Borneo, and Matsumura has added China and the Philippines.

2. *melaleucae,* sp. nov.

Whitish (tinged with yellowish sometimes on vertex and scutellum), minutely speckled with dark fuscous. Tegmina with most of the veins pale yellowish-brown on head, face, nota, tegmina and legs, the apical ones darker, part of the apex narrowly suffused. Lora remote from the apical margin of the genae. Vertex more rounded and a little shorter than in *E. sellata*, nearly twice as wide as the length. Claval veins united near the base by a cross vein, the anal vein slightly curved, meeting the commissure at an acute angle.

Male: valve short, transverse.

Female: apical margin of last sternite sublaterally emarginate, also minutely emarginate medianly. Pygopher about 3 times as long as last sternite, bristly, widened a little near the base, but narrowing at the base.

Length 4½ mill.

Hab. Queensland, Cairns (July), Nelson (July), Bundaberg (Sept.-Dec.) on *Melaleuca.*

Nephotettix.

All palaeogaeic species.

1 Head and nota not green.....(2)

1a Greenish-yellow; males usually with a black spot on the corium .....4 *apicalis*
2 Tegmina pale yellowish green grey.....1 *curytus*
2a Tegmina not tinged with green.....3
3 Blackish line on vertex straight (or very obtusely-angulate) .....2 *plebeius*
3a Blackish line on vertex arched parallel with the anterior margin .....3 *contemptus*

curytus, sp. nov.

Pl. II, figs. 5-6.

Yellowish testaceous, browner beneath. Tegmina pale yellowish green grey, subopaque, immaculate; membrane subhyaline, pale yellowish, smoky. Vertex a little shorter than the pronotum, about as wide as the eyes together, disk depressed, anteriorly obtusely rounded, a little tumid medianly, a very narrow straight transverse channel between the ocelli. Tempora wide; clypeus a little narrower at base than the apex of the frons, a little constricted immediately apical, thence widening more to the apex. Genae sinuate apically, scarcely angulate laterally, apex of lora practically contiguous with the apical margin of the genae.

Length $5\frac{1}{2}$ mill.

Hab: New South Wales, Mittagong (Jan.) one rather damaged female.

2. *plebeius.*

Pl. II, figs. 3-4.

Hab: add Viti Levu, Rewa (Mar., Muir).

4. *apicalis.*

Pl. II, figs. 11-13.

=*Cicada bipunctata* Fabr. 1803 Syst Rhyng.....
.....(nec. Scopoli 1763.) (=male.)
=*Pediopsis apicalis* Motschulsky 1859 Etud. Ent. 110.....
.....(=female.)
=*P. nigromaculatus* Motsch. op. c., 111 (=male.)
=*T. nigropicta* Stal 1870 O. V. A. F., XXVII 740 (=male).

=*Selenocephalus cincticeps* Uhler 1896 P. U. S. N. Mus., XIX, 292.

Hab: Queensland, (Cairns), Philippines, Riukiu, Formosa, China, Cochin China, Japan, the Malays, (Borneo, etc.), India, Ceylon, Madagascar, German East Africa, Egypt and Morocco on *Oryza sativa* and grasses.

On page 331 (of my former bulletin) I remarked that several species had been confused and indeed, if all the forms before me are one species only, it is very variable. Usually the tegmina are immaculate in the female, and with a large blackish blotch on the corium in the male; sometimes however the tegmina are immaculate in the male, there being gradations between. The genital segments are pale in the female, black in the male; they are however, partly pale in the immaculate males. There is usually a transverse, entire, black line between the ocelli; sometimes this is absent, as in 2 Sinhalese females in my own collection, but it is always present in the long Australian series before me. The frons varies from almost entirely piceous to almost entirely testaceous. The vertex is usually obtusely rounded, it is sometimes however, distinctly angulate.

Soracte gen. nov.

Probably nearest to *Platymetopius,* but the head is not so elongate, the tempora much narrower, the clypeus wider, the lateral margins of pronotum obsolescent and the venation different.

Vertex produced in front of the eyes, apically obtuse-angled, but not quite so long as the maximum width, disk somewhat depressed. Angulate in profile, the ocelli (which are large but flat and probably not functional) close to the eyes on the sharp margin itself. Frons broad, slightly narrowing apically, lateral margins feebly rounded, tempora almost obsolete. Genae sinuate, lora remote from their apical margin. Clypeus broad, narrower than the apex of the frons. Pronotum a little shorter than the vertex, finely striate transversely, acute-angled laterally. Scutellum wider than long. Claval suture longer than the mebrane, the latter with an appendix.

1. *apollonos,* sp. nov.

Brownish-olivaceous; anterior margin of vertex, an upright cross on the same, the lower limb dividing into 2 almost contiguous limbs, 4 longitudinal lines (a submedian and a sub-

lateral on each side) and a median T-shaped line on pronotum, 7 spots on scutellum (2 with an olivaceous speck each in the middle); a median line and numerous concentric, curved, transverse lines on frons; genae, clypeus, and lora (except some olivaceous-brown markings), pale yellowish-testaceous. Abdomen beneath mostly dark olivaceous brown. Tegmina subhyaline, tinged with olivaceous, veins widely colourless, margined narrowly with dark olive brown, sometimes a little suffused, especially the middle apical cell.

Female: last sternite roundly emarginate, the sides bluntly prominent. Pygopher elongate, narrow, with blackish bristles.

Length $4\frac{3}{4}$ mill.

Hab: Queensland, Cairns, (Aug., one female.)

Deltocephalus.

This seems to be characterized by a long, pointed vertex, frons longer than wide, tempora narrow, often obsolete basally, venation more complex.

2. *lotis,* sp. nov.

Vertex piceous with a thin median longitudinal testaceous line, basal half testaceous with two big piceous spots, a short transverse testaceous line on middle of apical half. Face piceous, frons with curved concentric lines on each side of the middle, irregular apically. Legs mostly piceous, fore and middle tibiae testaceous, suffused irregularly with piceous. Tegmina testaceous subopaque, with narrow piceous margins to the veins on both sides. Abdomen above piceous with about 5 rows of testaceous spots, below mostly piceous. Greatest width of vertex about the same as the length, vertex flattish, nearly rectangled apically, a little depressed basally. Vertex and frons acute-angled in profiile. Tegmina reaching to about half the length of the insect, obliquely transverse apically.

Length $3\frac{3}{4}$ mill.

Hab. New South Wales, Mittagong (Jan. K.) one female.

3. *D. polemon*, sp. nov.

Closely allied to *D. sylvestris* Osb. & Ball, but venation and genital segments different.

Vertex testaceous, with a faint olivaceo-fuscous stripe on each side of the median line, terminating apically in a fuscous speck. Face piceous, frons with 5 or 6 thin, concentric, curved,

inwardly abbreviated pale yellowish-brown lines. Pronotum testaceous, with 3 longitudinal pale olive-fuscous stripes on each side, the innermost broad and continuing on to the scutellum. Tegmina dilute yellowish cinereous, veins whitish testaceous, narrowly and irregularly margined with fuscous, apical cells mostly dark fuscous, the first and second apical veins whitish. Sterna and abdomen mostly dark fuscous or piceous, marked with pallid.

Male: valve short, triangular; plates little longer than the valve, the two taken together deeply emarginate angularly in the middle; pygophor more than twice as long medianly as the plates.

Female: last sternite roundly emarginate, bluntly anguiate at the sides; apex of pygophor pale, with particoloured bristles (yellow and dark fuscous.)

Length $3\frac{1}{2}$ mill.

Hab. Queensland, Cairns, (Aug.)

Sometimes the vertex and pronotum appear as though pale olivefuscous with pale lines.

4. *histrionicus*, sp. nov.

Vertex, pronotum and scutellum yellowish creamy, underside and tergites with a brownish tinge; anterior margin of head with two intersecting black curves; anterior two-thirds of pronotum (except laterally) suffused with ferruginous, a broken, angular, fuscous line at the base of this suffusion. Scutellum with a ferruginous spot at each anterolateral angle. Tegmina pale creamy whitish, tinged with ferruginous along the corial half of the clavus and on most of the apical half of the corium; subcostal cell yellowish creamy with the following dark fuscous markings, viz: a St. Andrew's Cross on the basal two-thirds (the basal right and apical left limbs being irregular) subcostal cell with 3 elongate spots, the third uniting with the St. Andrew's Cross; on the apical third there is an oblique sinuate line from near the apex of the clavus to near the apex of the subcostal, then curving round the apical margin, nearly reaching its starting point and enclosing a large spot. Wings hyaline, veins pale.

Female: last segment slightly notched medianly, pygophor yellowish, apically marked with black.

Length $3\frac{1}{2}$ mill.

Hab. Viti Levu (Mar. Muir's No. 143), on a native tree in the bush.

5. *lucindae,* sp. nov.

Male: white tinged with yellowish brown; frons with a dark suffused radiating pattern visible dorsally as 2 oblongs and 2 specks on the anterior margin of the vertex; margins of face brown. Pronotum and scutellum obscurely mottled. Legs annulate. Tegmina much as in *Conosanus hospes*. Abdomen beneath pale medianly, dark laterally. Valve pale, very large, semicircular, nearly as long as the plates, which are apparently about as long as the pygophor.

Female: (of this?) darker and more suffused. Abdomen below dark fuscous. Last segment deeply roundly excavate, pygophor dark speckled with pale, a little longer than the ovipositor.

Length (male) 3⅞ (female) 5 mill.

Hab. Queensland, Lucinda (July K).

6. *flavidiventris.*

Jassus (*Deltocephalus*) *flavidiventris* Stal 1859 Eugenies' Resa Ins. 294.

I do not know this species, laconically described from Sydney.

I agree with Van Duzee that his *Deltocephalus osborni* belongs to this genus and not to *Phrynomorphus*, as is indeed apparently the case with all the species placed by Osborn & Ball in *Commellus*.

Phrynophyes.

Phrynomorphus fatigandus cannot be placed in *Phrynomorphus* as restricted, it is nearer *Phrynophyes*. The elongate frons, vertex longer than wide and acuteangled apically, remove it from *Phrynomorphus* (even *sens. lat.*), while the venation is too simple for *Deltocephalus*. It has the characters somewhat of *Stirellus* but is very different from *S. curtisii*, the only species I have for examination; moreover *Stirellus* seems to merge gradually into *Deltocephalus*.

Driotura.

Dritotura O. & B., 1898, Proc. Davenport Ac. Nat. Sc. VII, 87.

1. *aristarche,* sp. nov.

Pl. II, figs. 9-10.

Probably allied to *D. robusta* O. & B.., but the head is longer and more angulate, and the tegminal reticulation coarser.

Male: vertex whitish-testaceous, heavily barred with piceous, frons whitish-testaceous, with curved concentric lines, which are much broader than the interstitial paleness; genae, clypeus and lora whitish-testaceous with a large dark fuscous spot on each. Anterior half of pronotum dark fuscous with a few tiny testaceous markings, posterior half whitish. Tegmina fuscous, veins margined both sides with piceous, apical margin broadly whitish. Fore and middle femora piceous, multi-annulate with testaceous, hind femora testaceous with irregular, longitudinal, fuscous stripes. Abdomen piceous with 4 or 5 rows of tiny testaceous specks, last tergite with the apical margin whitish-testaceous.

Female: head testaceous, suffused with pale fuscous. Vertex not quite as long as wide, angulate, a large dark fuscous spot on each side of the middle near the base, and interior to these a short dark fuscous line on each side a little anterior. Pronotum whitish, anterior half testaceous with fuscous markings. Tegmina whitish varying to fuscous with white apical margin. Abdomen above fuscous and whitish testaceous, almost irrorate. Abdomen below dark fuscous with a few testaceous markings. Frons brownish testaceous with dark fuscous curved concentric lines not touching medianly. Genae, lora and clypeus brownish testaceous, each with a fuscous spot. Legs as in the male.

Length 2 (male) to 2½ (female) mill.

Hab. New South Wales, Mittagong (Jan.).

Phrynomorphus.

This genus, in its most restricted sense, seems to be strictly synonymous with *Athysanus* Burmeister; the genus (for my purposes) has a transverse vertex, which is not longer than the pronotum, frons wide, wider at base than long, wide tempora and simple venation. The males have a valve. *P. taedius* is, I think, the only species of those I described in the first memoir that may be considered to belong here (*sens. strict.*)

In the subgenus *Conosanus*, with different head form, may perhaps be placed the following:

2. *longinquus.*

3. *hospes.*

Pl. I, figs. 13-17.

Deltocephalus hospes Kirkaldy 1904 Entom. 177

Originally described as an immigrant into Hawaii, it is now recorded from the whole of Eastern Australia (at least) and the lowlands of Fiji.

The *ova* are not remarkable, being of the usual Phrynomorphine type of Grass-feeder and are inserted in the usual way in the leaves of *Cynodon dactylon* (the "Dog's tooth grass" of England, and the "Maniania" of the Hawaiians).

The *last nymphal instar* (Pl. I., f. 13) is of the form of the adult, pale testaceous, with 4 olive-brown longitudinal lines, the 2 lateral terminating anteriorly at the eyes. There are about 24 black bristly hairs, 3 on almost each segment, arranged in 3 longitudinal rows, one submedian, one sublateral and one lateral. The anterior margin of the vertex is narrowly white with faint fuscous marks and a very narrow anterior line of fuscous. Frons with fuscous transverse lines from a pale central line, on the basal third. Clypeus faintly fuscous; labium black-tipped, reaching to the fore trochanters. Femora brokenly banded with dark fuscous or blackish, tibiae and tarsi dark fuscous or blackish at base of some of the bristles (especially the larger ones). The 2 or 3 apical abdominal segments laterally fuscous. Eyes greenish. Antennal flagellum reaching to about the middle coxa.

The *other nymphal* instars do not differ appreciably except that the frons is pale.

4. *chloriphe*, sp. nov.

Very similar in appearance to *Deltocephalus abdominalis* (Fabr.).

Bright yellow, tegminal veins concolorous. Frons pale brownish, obscurely suffused with darker tint, and with slender, concentric, curved, dark fuscous lines. Genae, lora, clypeus, &c., pallid, the last named a little fuscate medianly. Metanotum, sterna, (mostly) and basal half of abdomen above and beneath (except the lateral margins) blackish. Basal half of fore and middle femora blackish, hind femora dorsally black (except apex), hind tibiae longitudinally lined with black. Vertex triangular, as long in front of the eyes as behind, wider than long,

sulculate entirely, flat. Ocelli remote from the eyes. Frons longer than wide, with a small tubercle at the base medianly, a little wider apically than the clypeus basally; lora nearly touching the genae apcally; tempora narrow. Tegmina short, without appendix; not reaching apex of abdomen, apically rounded, only one subapical cell.

Female: last segment produced a little triangularly (very obtusely) in the middle; the pale brownish ovipositor is much longer than the elongate pygophor.

Length $3\frac{1}{3}$ mill.

Hab. Queensland, Bundaberg (Sept.-Dec., Koebele).

Vars: the frons varies from piceous to pallid. This is a pretty little species and rare.

Thamnophryne, gen. nov.

Differs from its allies by the minutely but deeply, completely, punctured pronotum; otherwise differs from *Thamnotettix* by the very short lateral margins of the pronotum.

1. *nysias*, sp. nov.

Head pale brownish-testaceous; vertex irregularly suffused with fuscous; frons with a few concentric curved fuscous lines which are often much abbreviated towards the middle of the frons, often almost obsolete. Base of genae (around the antennae) dark fuscous. Pronotum dark fuscous, yellowish-brown laterally, comparatively thickly, but irregularly, punctured with yellowish-brown. Tegmina milky hyaline, veins dark fuscous, many of them more or less suffused, especially the crossveins at the apex of the subcostal cell, and the apical veins apically. Many of the cells with a more or less elongate fuscous spot in the middle, the brachial cell with two. Legs testaceous, hind tibiae with blackish spots at the base of the bristles. Sterna and abdomen below mostly dark fuscous. Vertex short, rounded, apically, forming a curve with the eyes which are rather wider than the maximum width of the vertex. Frons longer than wide, tempora very narrow, almost obsolete. Clypeus as wide basally as the frons apically, constricted a little just apical of the base, widening as much towards the apex.

Male: genital segments strongly tufted.

Length $4\frac{1}{2}$ mill.

Hab. New South Wales: Mittagong (Jan.)

A male example from Queensland, Bundaberg, with the tegmina more suffused with olivaceous, and the genital segments not tufted, may form another species.

Lonatura.

Lonatura Osborn & Ball 1898 P. Davenport Ac. Sci., VII 83.

1. *austrina,* sp. nov.

Closely allied to *L. catalina* (which I presume to be the type), but the head is distinctly longer and the tegmina only reach to the base of the genital segment. Head, pronotum and scutellum pale yellowish, the frons with a pale ferruginous radiating pattern. Tegmina pale olive-green, the veins a little yellow, a broad smoky apical band. Abdomen black, the last segment white, pygophor white and black. Legs yellowish brown soiled with fuscous.

Length 1¾ mill.

Hab. New South Wales, Sydney (Feb., K.); Queensland, Bundaberg (Sept.-Dec. P).

This tiny species is allied to *L. catalina* by the venation, but there is apparently no appendix; and to *L. megalopa* by the frons being longer and basally more angular and by being patterned, also the lora are remote from the apex of the clypeus.

Allygus.

Allygus Fieber 1875 Rev. Mag. Zool. (3) III, 410.

1. *lotophagorum,* sp. nov.

Yellowish-testaceous, marbled with olive-brown on pronotum. Vertex with a mark and 6 spots in olive brown. Ocelli orange-red, very conspicuous. Frons yellowish-testaceous, strongly and broadly marked with a black radiating pattern. Genae yellow, margined apically with black and a median black spot. Clypeus and lora black, the former with 2 short pale lines, the latter with a pale spot each. Tegmina milky hyaline, closely marbled with olive-brown, but in parts only, so that there are 3 milky spots along the commissure on the clavus, and 5 or 6 on the corium, the latter less distinct; nodal veins suffused. Legs black with pale bristles, apical half of fore femora black, the

fore and middle tibiae spotted with the same, all the tarsi partly pale. Abdomen mostly black.

Male: genital pieces narrowly margined apically with whitish-testaceous and with white bristles.

Female: pygophor black, with white specks and white bristles on the apical half.

Length 3 mill.

Hab. Viti Levu, Rewa (Mch.-Apr., M), Ba (Jan., M.). A pretty little species.

Limotettix.

On reconsideration, I think I have made a mistake in sinking this name. The whole affair is in a great muddle, hinging largely on the equally muddled *Cicadula*, of which the type is really, as ascertained in my former memoir, *smaragdula*. Sahlberg's *Limotettix* was heterogeneous; apart from one or two disputed species, variously assigned to *Phrynomorphus*, *Deltocephalus* &c., (all prior genera), it is comprised of two main sections, (1)=a section of the *Thammotettix* of Puton's Catalogue (1899) and (2)=*Macrosteles* Fieber (=*Cicadula* Puton). As Woodworth has declared the type to be *quadrinotata* (Fabr.) i. e. of the species of the first section, and as Edwards (1896) also uses it in the same sense, it is perhaps proper to keep it so, with *Euleimonios* as a synonym.

2. *filicicola,* sp. nov.

Pale luteous, paler beneath, pronotum tinged with brown. Anterolateral margins of vertex broadly black (meeting angulately at apex). Pronotum with 4 dark fuscous lines, the two middle of which continue on to the scutellum. Tegmina with a nearly entire, dark fuscous, longitudinal median line, 2nd to 4th apical cells hyaline, veins dark, apical margin of the first suffused and a spot in the middle of the cell. Wings hyaline, veins fuscous. Abdomen above more or less fuscous.

Male: genital segments short, concolorous.

Female: last segment apically black, roundly emarginate; pygophors pale brownish ferruginous, elongate; ovipositor black, much longer than the pygophors.

Length (male) 3 (female) 3⅛ mill.

Hab. Viti Levu, (Nov. Muir's No. 15), Rewa (Apr. M.), on tree-ferns.

3. *tachyporias*, sp. nov.

Superficially somewhat like the last.

Pale yellowish, tergites and the underside paler. Frons basally and the lateral angles of pronotum blackish brown. Tegmina hyaline with an entire longitudinal, blackish brown median stripe. Vertex rounded (slightly angulate) extending in front of eyes, a trifle longer than wide at base.

Male: 7th segment subtruncate; valve narrow, semicircular; plates pointed, lateral margin sinuate, scarcely as long as pygophor.

Female: 7th segment very slightly produced in the middle.

Length 3⅞ (male) 4 (female) mill.

Hab. Queensland, Bundaberg (Sept.-Dec. K.).

4. *capitatus*, sp. nov.

Head, pronotum and scutellum pale yellowish brown; vertex with 2 large metallic blue black spots; face tinged with ferruginous; a blackish spot on each side just apical of the antennal scrobes. Tegmina hyaline, faintly smoky, except the subcostal and the 3rd and 4th apical cells. Wings hyaline, veins pale fuscous. Legs pale yellowish brown. Underneath dark fuscous or blackish brown. External subapical cell longer than the interior.

Female: 7th segment roundly produced; pygophors fuscous with shortish yellow brown bristly hairs; ovipositor black.

Length 3 mill.

Hab. Queensland, Cairns, (Aug. P.).

Pettya

1. *anemolua.*

The wingvein is like that of *Balclutha*, except that there is no submarginal vein.

Nesosteles

The first two wings veins are confluent towards the apex. The genus is very close to *Balclutha*.

1. *hebe.*

Add: Viti Levu, Rewa (Mar., Apr., M.) and Navua (Feb. M), and I think the same species is at Bundaberg (Sept.-Dec.).

Cairns (July) and Lucinda Point (July) in Queensland, but these species are difficult to separate.

2. *glauca*.

The vertex is shorter than in *N. hebe*, more convex and not flush with the pronotum. I think this also occurs at Kuranda.

6. *dryas* sp. nov.

Allied to *N. sordidior*, but smaller and paler. Head testaceous, more or less suffused with pale orange-brown, a short longitudinal suture and a lateral impression, reddish-brown. Pronotum creamy, with 3 thin orange-brown longitudinal lines continued (more widely) on to the scutellum. Tegmina creamy, veins white, the first two apical veins margined with fuscous. Wings milky hyaline, veins on the apical third mostly fuscous. Sterna, legs, and sternites creamy with a tinge of brown. Tergites black, last segment pale.

Male: Pygophor pale.

Female: last segment sinuately angularly emarginate, lateral angles acute; pygophor elognate.

Length 4½ mill.

Hab. Queensland, Redlynch (July), Cairns (July, Aug.), Bundaberg (Sept.-Dec.).

7. *aurantiigera*, sp. nov.

Head, pronotum and scutellum pale greenish-yellow. Tegmina and legs orange-red, the former with conspicuous whitish-veins, the apical cells hyaline. Wings milky. Tergites fuscous, hind margin of the segments pale yellowish. Vertex rounded in front, less than half the length of the pronotum, about as long medianly as at the eyes.

Length 4 mill.

Hab. Queensland, Cairns (Aug., P.).

The two following species probably do not belong to *Nesosteles*, but as some of the species of that genus approach *Balclutha* (of which I know only one species), I prefer, for the present, to include these two in *Nesosteles*.

8. *phryne*, sp. nov.

Creamy testaceous, basal four-fifths of abdomen dark fuscous. Tegmina hyaline milky, veins creamy. Wings hyaline, veins on apical half pale fuscous. This differs from typical *Nesoxteles* by the radial vein being scarcely obsolescent, and by the vertex being as long as wide between the eyes, nearly as long as the pronotum, angularly produced, nearly twice as long in the middle as at the eyes.

Length 4 mill.

Hab. New South Wales, Mittagong (Jan., K).

9. *chloe*, sp. nov.

Bright-green. Tegmina hyaline, veins green. Wings and wing-veins hyaline. Vertex roundly angulate anteriorly, a little shorter proportionately than in *N. phryne*.

Length 4 mill.

Hab. Queensland, Kuranda (Aug., P.); New South Wales, Sydney (Feb., K.).

Euterygini.

Further study has necessitated the reduction of this group from subfamily to tribe. I am unable as yet to give a circumscribed diagnosis, owing to the inclusion of *Ancono* and *Dialecticopteryx*, but have not seen a specimen of any form where the basal part of the tegminal venation is clearly interpretable; apparently, however, the 3 main veins either spring together out of the basal cell, or the radial and median have a short stalk. (*) There seem to be four apical tegminal-cells, but often the first is obsolescent or even entirely absent. *Ancono* and *Dialecticopteryx* belong here by habitus, but have peculiar venation. The following table seems to bear a closer approximation to the natural affinities of the forms than that in my first memoir.

1 The 3 main veins of the tegmen running separately to the apical cells, or only joined quite close to the base...(2)
1a Median and cubital veins united by a stalk apically...(13)
2 Face of the usual type .....(3)
2a Frons closed basally .....(12)
3 Three apical wing cells [Group A].....(4)

* Woodworth's figure of an Eupterygine tegmen (1906, Techn. bull. Univ. California Ent. I f. 61, is unlike any I have seen.

3a Two apical wing cells [Group B] (**).....(6)
3b One apical wing cell [Group C] (**).....(11)
4 Tegminal appendix present.....(5)
4a Tegminal appendix absent, submarginal wingvein present .....(10)
5 Submarginal wingvein present.....1 *Alebra*
5a Submarginal wingvein absent.....2 *Protalebra*
6 Submarginal wing vein present; third apical wingvein forked .....(7)
6a Submarginal wingvein absent.....(9)
7 At least two of the apical cells of the tegmen arising from the transverse veins .....(8)
7a Only one of the apical cells arising directly from the transverse veins .....5 *Kahaono*
8 Body long and slender .....3 *Dikraneura*
8a Body short and robust.....4 *Erythria*
9 First two wing veins subparallel.....6 *Eupteryx*
9a First two wing veins confluent towards the apex..... .....7 *Erythroneura* (=*Empoa*)
10 Vertex twice as long as pronotum.....8 *Nirvana*
10a Vertex shorter than pronotum .....9 *Eualebra*
11 Submarginal wing vein present.10 *Cicadula* (=*Empoasca*)
11a Submarginal wing vein absent.....11 *Typhlocybella*
12 Vertex wider than an eye, not produced anteriorly, forming a curve with the eyes; frons not twice as long as maximum width .....12 *Apheliona* (type *Heliona biocula Melichar*)
12a Vertex narrower basally than an eye, angularly produced anteriorly; frons elognate, more than 3 times as long as maximum width; lora elongate.....13 *Heliona*
13 Vertex not produced in front of eyes; radial and median with a common apical stalk .....14 *Dialecticopteryx*
13a Vertex triangularly produced; cubital and median with a common apical stalk .....15 *Aneono*

It appears to me that a form with three apical wing cells and a tegminal appendix represents the most generalized, degradation to two and then to one wing cell results in Groups B and C, the former first having a submarginal wing vein, then losing that.

** Not counting the supernumerary cell.

Alebra seems to represent very fairly the more primitive forms and I imagine it more likely that *Protalebra* has been developed from a form like *Alebra* than *vice versa*. *Alebra*-like forms by losing the submarginal vein that is to say, the apical margins of the apical veins, develop into *Zygina*, *Eupteryx*, etc. I have no specimens now of *Nirvana* for examination, but judging from Melichar's figures, it is very likely to be an Eupterygine genus.

Cicadula.

2. *vitiensis*.

Line 9 of description, for "with" read "wing."

Hab. Viti Levu, Rewa (Feb. Mar. Nov. & Dec., M.).

One example is pale yellowish-green (instead of lemon-yellow) and the legs are green (instead of pale greenish); this, no doubt, is the colour when alive. The last segment of the female is practically truncate apically. The ocelli are fairly well pronounced and lie within the pale oblong, bordered by the two dark transverse lines, on the top of the head.

3. *hyadas* sp. nov.

Pale lemon yellow, paler beneath. Eyes greyish-black. Tegmina milky, a short dark fuscous line on the apical margin at the basal internal angle and a greyish fuscous spot at the apex of the tegmen. Wings milky, veins partly fuscous. Vertex about as long as the scutellum, shorter than the pronotum, nearly twice as long medianly as at the eyes, angularly rounded in front.

Female: ovipositor black.

Length 3⅛ mill.

Hab. Viti Levu, Rewa (Dec., M.).

4. *euryphaessa* sp. nov.

Allied to *C. rufa* (Melichar), but the head is longer, pronotum shorter, legs pale, etc. Bright scarlet; vertex pale testaceous with a mediolongitudinal suffused scarlet stripe, which forks at the base of the frons and extends all over the face suffusedly (sometimes the red stripe is obsolete at the fork, the frons then being entirely pale, only the genae and the clypeus, etc., red.) Apical third of tegmina hyaline, iridescent, veins there pale yellowish. Wings hyaline, iridescent, basal veins pale sanguineous.

Tergites mostly sanguineous. Underside and legs pale testaceous, the former sometimes a little suffusedly sanguineous. Vertex longitudinally sulculate, anteriorly somewhat swollen, longer than wide, roundly produced before the eyes. Pronotum scarcely wider than the head and only about one-half of its length, shorter than the scutellum, scarcely emarginate posteriorly, lateral margins short. Tegminal venation that of *C. rufa,* except that the interior branch of the first apical vein is curved.

Female: last sternite very slightly sinuate, the pale part longer than wide.

Length 2½ mill.

Hab. Viti Levu, Rewa (Mar.-Apr.) Navua (Feb. Muir's No. 53) on a native tree, also on *Saccharum officinarum.*

There is a purplish bloom on one example, giving it a superficial resemblance to *Erythroneura doris.*

Erythroneura.

6. *sidnica,* sp. nov.

Pale yellowish, immaculate, paler beneath. Head shaped as in *E. dentata* (Gillette), but more rounded and the eyes more decumbent on the pronotum, which is posteriorly slightly emarginate.

Length abt. 3 mill.

Hab. New South Wales, Sydney (Jan.-Feb., K.).

In bad condition.

7. *doris* sp. nov.

Distinguished by the large pronotum and minute scutellum, as well as by the colour.

Head, pronotum, sterna, legs, etc., pale testaceous. Pronotum laterally from antero-lateral angle of the scutellum to the intero-posterior angle of the eye, dark fuscous. Scutellum testaceous tinged with pale purplish blue. Tegmina pale sanguineous, tinged with violaceous, basal two-thirds of subcostal and subradial cells purplish, apical third of tegmina hyaline, veins pale sanguineous. Wings hyaline, iridescent, tinged with fuscous, veins dark. Abdomen dark fuscous. Vertex wider than long, extending nearly as far in front of the smallish eyes as basally, angularly rounded apically. Pronotum large, a little wider than the head,

and longer than the vertex, about one-half wider than long, lateral margins long, anterior and posterior margins subparallel. Scutellum minute, not one-half the length of the pronotum.

Length (female) $2\frac{1}{3}$ mill.

Hab. Viti Levu, Rewa (Apr., Muir).

8. *lalage*, sp. nov.

Allied to the last, but head shaped differently, scutellum longer and different colour. Head, sterna and legs pale testaceous, the vertex with a large dark fuscous spot arising close to the base and extending on to the frons nearly as far apically as in line with the insertion of the antennae. Pronotum anteriorly obscure purple, posteriorly dark fuscous, an obscure fuscotestaceous line mediolongitudinally, extending on to the obscure-purplish scutellum. Abdomen dark fuscous. Tegmina and wings as in *E. doris*. Eyes a little larger; vertex more rounded on the anterolateral margins, wider than long. Pronotum as in *doris*, but a little shorter and the anterior margin a little arched. Scutellum at least three fourths of the length of the pronotum.

Female: base of genital segment obscurely pale.

Length $2\frac{1}{3}$ mill.

Hab. Viti Levu, Rewa (Apr., Muir, 1 female).

9. *leucothoe*, sp. nov.

May be regarded as a "*Zygina*," although there are three subparallel apical veins, the first diverging a little outwards, and being a direct continuation of the radial, more approaching *Dikraneura* from which it differs only by the absence of the submarginal. Pale whitish testaceous; tegmina milky white, (a large opaque area occupying middle third of subcostal cell), veins concolorous; a blood-red spot at the base of the second apical vein and a tiny blood-red speck at the apex of the clavus. Vertex produced well in front of the eyes, about as long as wide, roundly angulate. Pronotum anteriorly rounded, about as long as the vertex and a trifle longer than the scutellum. Eyes not nearly touching base of tegmina. Radial and median veins apparently unite at about the apical margin of the basal third of the tegmen.

Length (female) 2 mill.

Hab. Viti Levu, Navua (Feb., Muir).

10. *rewana,* sp. nov.

Yellowish-brown, paler beneath, pronotum somewhat sordid, abdomen blackish. Tegmina smoky hyaline; clavus, sutural cell of corium and subcostal cell, pale yellow smoky in parts; veins pale yellow; a dark smoky spot at apex of tegmen. Wings smoky hyaline, veins smoky. Vertex somewhat convex, roundly prominent in front of eyes, but not so long as wide. Four apical cells to the tegmen, the first very small.

Length 2⅓-2½ mill.

Hab. Viti Levu, Rewa (Mar. & Dec. M.).

The yellow is apt to fade and become obscure.

Nymph: The ultimate stage (as far as can be judged from the empty skin) is brownish-yellow. Head produced in front of eyes at least as far as the length of the rather long eyes beyond them. Antennal peduncle elognate and conspicuous, flagellum much longer than the body. There are a large number of erect capitate hairs disposed as follows: 6 on the lateral and anterior margin of the vertex 4 on the pronotum, 8 submedian and 6 lateral on the abdominal tergites, also a number on the meso and metanotum, tegminal pads and legs.

Dialecticopteryx, gen. nov.

An aberrant genus, distinguished by the peculiar venation of tegmina and wings.

Vertex transverse, declivous, anteriorly rounded, not (or scarcely) prominent in front of eyes, longitudinally sulculate, posteriorly marginate and raised from the pronotum. Pronotum transverse, little longer than the vertex, lateral margins short, carinate. Scutellum longer than wide, about as long as the pronotum. Tegmina (Pl. 1, fig. 7) sparsely punctured, venation obscure; the radial and median are united at the base, fork soon after, but keep very close together till a little basal of the apical calls when they reunite; cubital obsolete basally, only appearing a little basal of the apical cells. The radiomedial reforks apical of the subapical line, thus forming a triangular cell; there are 2 quadrilinear cells interior of this (perhaps more if the apical veins fork). No veins in the clavus and no appendix. The extreme apex of the wing is unfortunately broken but enough remains to show its peculiar character (see Pl. 1 fig. 6). This genus shows some relationship to *Nesosteles,* etc.

1. *australica*, sp. nov.

Pl. 1. figs. 6-7.

Orange-yellow, legs paler; 2 large bluish-black round spots on the vertex and a smaller one on the frons. Pronotum with an inverted blue-black V, connecting on the scutellum with an inverted A. Tegmina milky white, subcostal vein basally, radial, median and commissure suffusedly smoky, extreme margins of tegmen here narrowly black; radiomedial (apical) and continuation of the commissure apical of the clavus, smoky but not suffused. Wings hyaline, iridescent, veins pale fuscous partly.

Male: plates long, triangular taken together.

Female: 7th sternite triangularly produced, pygophor yellowish brown, ovipositor dark fuscous.

Length 4½ mill.

Hab. Queensland, Bundaberg (Sept.-Dec., K.).

Tribe *Cephalelini*.

This is only a small part of the tribe of this name in my first memoir. It is restricted to those forms in which the tibiae are very feebly bristly; owing to a degradation of the flight organs, the tegminal and wing venations are usually much reduced. Incidentally the head is usually greatly elongate and foliaceous or subfoliaceous.

Cephalelus, Doryccphalus, Paradorydium, and others not known to me in nature, as *Dorydiella*, belong to this tribe.

Paradorydium.

4. *brighami*, sp. nov.

Distinguished from the other species by the short vertex.

Pale yellowish, closely punctured with light brownish, the punctures being closer and darker on the basal half of the pronotum. Head close around insertion of antennae, the labium, sterna, etc., dark fuscous. Sternites (except the last segment which with the genital segments is pallid) infuscate. Fore femora ringed with fuscous. Vertex acute anteriorly, lateral margins straight. Frons anterior to the antennae diamond-shaped, then the lateral margins parallel, the insertion of the antennae about on a line with the apical margin of the eyes (instead of distinctly nearer the ante-

rior angle of the head); apical margin of clypeus minutely notched, extending apically distinctly beyond the apical margin of the genae.

Male: vertex nearly twice as long as pronotum; maximum width greater than median length.

Female: vertex about twice and a half as long as the pronotum; maximum width less than median length.

Length 3½ mill.

Hab. New South Wales, Mittagong (Jan., K.).

This species, (which I name in honour of Dr. W. T. Brigham, Director of the Bernice Pauahi Bishop Museum in Honolulu, whose "Index to the Islands of the Pacific" (1900 Mem. Bishop Mus. I, 1-172) is of such great value to the student of Pacific Faunas), seems very distinct from such *Paradorydia* as *lanceolatum*, *foveolatum*, etc., but I can see no generic differences beyond the much shorter head. On this and the straight lateral margins of the vertex, I found a new subgenus *Deltodorydium*.

5. *ovidii* sp. nov.

Allied to the last, but the head more elongate, the head and pronotum forming two-fifths of the entire length, and the lateral margins are concavely curved, the species thus falling into the typical subgenus. It differs from *P. foveolatum* Sign., by the much less spatulate head and less pointed tegmina.

Length (female) 5 mill.

Hab. New South Wales, Mittagong (Jan.).

Dorycephalus.

3. *trilineatus.*

The exact habitat was "New South Wales, Sydney (Jan., K.)."

Tribe *Iassini.*

Van Duzee includes this as a tribe of his Jassina, but it is far more distinct from his 'Deltocephalini' than these are from his 'Subfamily Acocephalina.' The Iassinae are characterized by the vertex being perpendicularly raised at the sides and base, the latter being practically truncate between the eyes, and distinctly narrower there than the apical margin of the scutellum. Head and eyes distinctly narrower than the pronotum. Frons

elongate. Wings with a supernumerary cell. There is only one subapical cell in the tegmen (*). The ocelli are well-marked and are on, or near, the apical margin of the vertex and are visible dorsally. In the 3 genera known to me, the vertex is obliquely striate, the pronotum finely granulate and the scutellum very finely punctured. The female genital segments are of the usual Tetigoniine type, but the male plates are very long and of characteristic appearance; the valve is wanting.

The structure of the head, of the venation and of the male plates distinguish this group very thoroughly. *Macrocratogonia* has some affinity with these forms, but only females are known at present; the interior discoidal cell is also divided by a transverse vein in both the specimens I have seen. It has also great affinity with the Tetigoniini and Penthimiini, but must at present be relegated to a provisional tribe by itself.

Eight genera of Iassini are known.

1 Vertex more than twice as long as wide, triangular produced ..... 3 *Muirella*

1a Vertex not longer than wide ..... (2)

2 Fore femora and tibiae foliaceous ..... 8 *Gabrita* (=*Petalopoda*)**

2a Femora simple ..... (3)

3 Pronotum keeled ..... 7 *Thagria*

3a Pronotum not keeled ..... (4)

4 Vertex expanded posteriorly behind the eyes; ocelli near the apical margin of the vertex; anterior and posterior margins of the pronotum subparallel ..... 5 *Tinobregmus*

4a Vertex not expanded behind the eyes ..... (5)

5 Ocelli near the eyes; anterior margin of pronotum rounded ..... (6)

5a Ocelli remote from the eyes; anterior margin of pronotum straight ..... 6 *Neocoelidia*

6 Scutellum much shorter than pronotum ..... 4 *Pelicus*

6a Scutellum not shorter than pronotum ..... (7)

7 Anterior tibiae curved ..... 3 *Ternlia*

7a Anterior tibiae straight ..... (8)

8 Frons rather flat, distinctly sutured; tempora wide but short; antennae inserted near the intero-posterior angles of the eyes ..... 1 *Iassus*

* It is true there are two in *Tharra labena*, but in the unique type of this, the exterior discoidal cell is divided apical of its middle by a short transverse vein, which is absent in the other species of the genus.

** There is nothing in the descriptions of these to keep them apart.

8a Frons raised, less distinctly sutured, tempora narrow and very short, antennae inserted near the intero-anterior angles of the eyes ..... 2 *Tharra*

Tharra.

I separated this (Bull. I p. 324) from *Iassus* by the possession of two subapical cells and the absence of transverse veins in the clavus; the latter is of no value and the former is, I am inclined to believe, accidental. It is possibly only a group of *Iassus*, but for the present may be separated by the characters given in the key. Typical *Iassus* also seems to have the apical margin of the vertex forming more or less of a curve with the eyes. The only species of *Iassus* I have seen is represented by a pair of *I. olitorius* Say, kindly given me by my friend, Mr. Van Duzee.

In *Tharra labena, kassiphone,* etc., the median and brachial veins are generally united by a straight cross vein at their bases, this being united to the radial by an outwardly inclined oblique vein; but in *T. kalypso* and *ogygia* there is usually a common longitudinal stalk for the median and brachial, which is united to the radial by the oblique vein. This however is not constant and moreover sometimes the stalk vanishes, and the median and brachial unite at an angle.

In all the species, the frons is not, or only faintly, medianly keeled and the clypeus is not ampliate, though often a little widened, apically.

The species (all Australian and Fijian up to the present) may be disposed as follows:

1 Vertex distinctly narrower at the base than at the anterior margin of the eyes, not flush with the eyes, lateral margins gradually divergent. Anterior and middle legs bright orange yellow ..... 5 *kassiphone*

1a Vertex little wider (if at all) at anterior margin of eyes than basally, flush with the eyes, lateral margins parallel or subparallel as far as the anterior margins of the latter. Legs pallid or black 2

2 Part of vertex produced before eyes not more than a third of the length of the basal part 3

2a Part of vertex produced before eyes about two-thirds of the length of the basal part ..... 4 *nausikaa*

3 Tegminal veins bright sanguineous ..... 1 *labena*

3a Tegminal veins pallid, sometimes faintly sanguineous....4
4 Tegmina yellowish brown; head and pronotum more or less orange brown .....2 *ogygia*
4a Tegmina pale testaceous, a pale fuscous band across the middle .....3 *kalypso*

Iassus detractus Walker, from Tasmania, is not includ d.

1. *labena.*

I have little doubt that the division of the discoidal, in the unique specimen, is an aberration. This single example is a male, not a female. The last segment is deeply, minutely, roundly emarginate and the plates (not 'valve') are elongate, and covered with long, curling, rather coarse, white hairs.

2. *kalypso* sp. nov.

Pale yellowish testaceous, a little paler beneath, vertex slightly embrowned. Tegmina hyaline with colourless veins (sometimes very narrowly margined with pale greyish fuscous), an irregular pale greyish fuscous band across the tegmen, sometimes other small suffusions. Tibiae apically and tarsi fuscous. Tergites more or less fuscous discally. Vertex much as in the type, perhaps a trifle wider; frons also in the type, but a little flatter, clypeus scarcely so broad apically.

Female: last segment roundly, a little angularly, produced, angularly emarginate narrowly, but sufficiently deeply, posteriorly; medianly carinate; the fuscous ovipositor is longer than the pygophor.

Length 6¼-6½ mill.

Hab. Viti Levu, Rewa (Apr., Muir).

3. *ogygia* sp. nov.

Form of the last; cheeks a little marginate interiorly. Yellowish brown, paler beneath, more or less suffused with rosy on head and pronotum. Tegmina yellowish brown, veins concolorous, or slightly tinged with sanguineous, apical cells apically (sometimes medianly but obscurely) fuscous. Apical half of hind tibiae dorsally fuscous. Tergites more or less fuscous discally.

Male plates elongate, with short pale yellowish grey bristly hairs.

Female genital segments much as in the last.

Length (male) ½ (female) 6 mill.

Hab. Viti Levu, Rewa (Mar.-Apr., Muir).

4. *kassiphone* sp. nov.

Male: shining black; lateral margins of vertex, very narrowly (and ending at the apical margin of vertex), antennal peduncle, and labium, pale yellowish. Tegmina very dark fuscous, basally opaque black, shining. Fore and middle legs (except the somewhat fuscous coxae and claws) bright orange yellow; hind tibiae pale at extreme apex. Appendix to tegmina pale. Wings dark fuscous, veins black. Vertex distinctly narrower at the base than between the apical margins of the eyes, not flush with the eyes at the former, diverging regularly towards their apical margin, scarcely one third extended in front of the latter. Antennae inserted at about the middle of the interior margin of the eyes (ventrally), tempora short, very narrow. Plates much as in *T. labena*, but the hairs shorter and yellower.

Var. Clypeus, and apical margin, very narrowly, of genae, pale.

Female. Larger than the male; a longitudinal elongate-oval, pale yellow line on the vertex, not attaining (as a rule) the apical margin or the base; genae (except a trifle fuscous here and there sparsely) and clypeus pale yellow, as also sometimes the extreme base of the lorae. Tegmina with the subcostal vein right around to the apex of the tegmina, a long oval spot near the base of the subcostal cell and a long suboval stripe exteroapically on the same, a small spot near the apex of clypeus and another at the base of the tegminal appendix, pale yellowish brown. Fore and middle femora, tibiae and tarsi etc., bright orange-yellow, hind legs mostly blackish, at least dorsally. Genital segment as in *T. kalypso*, but scarcely emarginate medianly.

Var. Sides of pronotum pale yellowish, narrowly.

Length (male) 5 (female) 6 mill.

Hab. Viti Levu, Rewa (Mar., Apr., Dec., Muir).

5. *nausikaa* sp. nov.

Similar to the last, but less polished, fore and middle legs *pale* yellowish, the yellow of the head and pronotum browner, the head longer, etc.

Male: black, with a strong, entire, wide, longitudinal pale yellowish-brown, continued to the posterior angle of the scutellum, the pale lateral margins of the head widening a little in front of the eyes and meeting in a curve at the base of the frons;

apical half of clypeus, the labium, fore and middle legs (except the more or less fuscous coxae and claws) pale; hind femora dark, tibiae more or less pale, at least ventrally. Tegmina dark fuscous, subcostal cells up to the oblique vein (except extreme base), a spot close to apex of subcostal cell, apical of the oblique vein, a spot at base of appendix, etc., pale. Vertex very little wider at anterior margin of eyes than at base, the latter practically flush with the eyes, lateral margins subparallel as far as anterior margins of eyes, then suddenly diverging. Vertex anteriorly roundly angulate, nearly as long in front of eyes as behind their anterior margin; frons rather narrower apically.

Vars. face entirely blackish or mostly pale; there are sometimes 3 pale lines on the pronotum. Tegminal veins varying from black to pale yellowish-brown, the latter sometimes a little tinged with sanguineous. Tegmina varyingly spotted with pale yellowish brown. Scutellum sometimes immaculate, sometimes posterior third pale.

Female larger than the male, and usually of the paler vars.

Extreme var. (male and female), *pallidor* nov. is pale cinereous above, with only scattered fuscous spots on the tegmina, four fuscous lines on the pronotum, etc.

Length (male) 4½-(female) 5½ mill.

Hab. Viti Levu, Rewa, (Feb., Apr., Nov., Muir), Navua, (Feb., Sept., Muir); Muir's No. 201 is an example of the less typical forms.

6. ————, sp?

Pl. II, fig. 14-15.

Only the nymph known so far.

Yellowish-white. Apical half of vertex; all the face except a median longitudinal stripe in the middle, reaching the clypeus but not the vertex; pronotum, tegminal pad, apical margin laterally of metanotum; two stripes down the abdomen, not quite reaching posterior margin, joined basally and apically, extending at these points to the lateral margins; apical half (except extreme) of femora, basal third (except extreme) of hind tibiae; sanguineous. Claws and arolia fuscous.

Hab. Viti Levu, Rewa (Apr., M.).

Muirella gen. nov.

Vertex flat, elongate, a little declivous, and somewhat sloping laterally, about twice and one half as long as wide at the truncate base, lateral margins parallel for about three-fourths of their length, then diverging outwardly to a little beyond the anterior margin of the eyes, then converging strongly, forming a roundedly acute angle. In profile the head is subconical. Ocelli lateral, a trifle nearer to the eyes than to the top of the head, visible dorsally. Frons elongate, about twice and a half as long as wide at antennal scrobes, a little wider just basal of this, narrowing apically and basally, basally acutely triangular, apically subtruncate. Tempora very short and narrow. Genae deeply impressed roundly in the middle. Clypeus not produced beyond the apical margin of the genae, about twice as long as wide, strongly carinate on the basal half, a little wider than the lora which do not touch the posterior margin of the genae. Labium reaching to anterior margin of fore trochanters. Antennae inserted anterior to the middle of the eyes (viewed in profile), the eyes extending posteriorly beyond the apical margin of the frons (thus separating this genus from the others) and decumbent nearly one-half, on the pronotum dorsally; seta long, more than half the length of the body. Pronotum transverse, lateral margins fairly long, somewhat feebly carinate; posterior margin obtuse-angularly emarginate. Scutellum wider than long. Tegmina with one subapical and 4 apical cells; the subcostal cell obliquely divided near the apex by a fork of the radial. Wing with a supernumerary cell, which however does not nearly reach the apical margin of the wing, the next of the apical cells being thus short and broad.

1. *oxyomma* sp. nov.

Pl. II, fig. 21-2.

Male. whitish testaceous (sometimes pale yellowish brown), usually more or less suffused rosily. Face usually with a transverse blackish band from eye to eye near the base (lora and clypeus, etc., often more or less fuscous). Prosterna, pleura partly, a spot on fore coxae, etc., blackish. Abdomen mostly blackish. Tegmina with the clavus, basal half of corium (except subcostal cell) and a bifid band near the apex dark fuscous or blackish (opaque basally), the rest yellowish brown. Veins bright sanguineous. Wings dark fuscous, iridescent, veins black. Hind

femora more or less blackish. Plates long, with long pale greyish hairs.

Female: abdomen yellowish testaceous, partly suffused with fuscous. Tegmina yellowish brown, an oblique dark fuscous band at base of apical third, a more obscure one basal of that; apical margin narrowly smoky, veins bright sanguineous. Hind femora pale. 7th sternite sinuate, minutely obtuse-angled in the middle.

Length (male) 6- (female) 6¼ mill.

Hab. Viti Levu, Rewa (Mar., the unique male, type, and females) and Navua (Feb.) (Muir's Nos. 116 and 203).

Nymph: pale whitish testaceous, fuscate on pronotum and scutellum, sparsely so on tergites; some sparse orange-red marks on the head. Vertex, pronotum and scutellum carinate, the first much of the appearance it has in the adult. Tergites with one submedian and one lateral row of piliferous, punctured granules. (Pl. I. figs. 10-12).

I have pleasure in dedicating this genus and species to my friend and colleague.

Tribe Penthimiini.

(=Gyponidae auctt.)

I can find no good characters to separate this tribe. It runs into the Tetigoniini via *Evacanthus*, into the Phrynomorphini via *Errhomenellus* and *Chiasmus*; its forms are usually less elongate, and the ocelli are usually on the disk of the vertex, but situated in front of a line drawn between the anterior margin of the eyes; this is however not the case in some species at present attributed to *Gypona*.

The following genera are I believe all that have been described:

1 The head dorsally with a large suboval area separated off anteriorly by a deeply impressed line..1 *Ectopiocephalus*

1a Head dorsally without a part separated off.....(2)

2 Tegmina very short, venation obscure.....(3)

2a Tegmina reaching at least as far as the base of the genital segment, fully formed .....(4)

3 Clypeus extending well beyond the apical margin of the genae, longer than half the length of the frons..... ..... 2 *Errhomenellus*

3a Clypeus extending only as far as the apical margin of the genae, not longer than half the frons .....3 *Chiasmus*

4 Pronotum prolonged posteriorly (more or less as in the Cercopidae) or at least distinctively longer than wide (5)
4a Pronotum wider than long.....(7)
5 Pronotum medianly truncate behind..... 4 *Signoretia*
5a Pronotum angularly emarginate behind.....(6)
6 Vertex gently rounded in front; frons subquadrate, truncate basally ..... 5 *Bathysmatophorus*
6a Vertex subangular in front; frons longoval, produced basally ..... 6 *Xerophloea*
7 Frons with a keel down the middle.....7 *Evacanthus*
7a Frons without a longitudinal keel.....(8)
8 Tegmen without an appendix .....(9)
8a Tegmen with an appendix .....(10)
9 Ocelli indistinct .....8 *Aglena*
9a Ocelli distinct .....9 *Uzelina*
10 Tegmina apically subsinuately truncate.....10 *Jafar*
10a Tegmina apically more or less rotundate.....(11)
11 Pronotum extending farther laterally than the tegmina, which arch outwards beyond the subaparllel basal fifth ..... 11 *Penthimia*
11a Pronotum not extending farther laterally than the tegmina, which arch outwards from the base, if at all.....(12)
12 Scutellum distinctly wider than the head..12 *Penthimidia*
12a Scutellum not wider than the head.....(13)
13 Anterior margin of vertex in profile acute or subacute; frons basally excavated .....(14)
13a Vertex not acute in profile, sometimes bluntly keeled; frons not excavated .....(15)
14 Head laminate; tegmina hyaline .....13 *Thaumatoscopus*
14a Head scarcely foliaceous; declivous; tegmina with numerous ramose "false" veins.....14 *Vulturnus*
15 Vertex declivous, sufficiently elongate.....15 *Gypona*
15a Vertex very short, forming one curve with the frons..(16)
16 Pronotum transversely striate.....16 *Scaris*
16a Pronotum not striate .....17 *Zinneca*

18. *Neodartus*, I do not know.

Vulturnus.

Differs from *Thaumatoscopus* principally as follows: vertex more declivous; clavus and the subcostal cells with numerous transverse veins and usually the entire tegmen with numerous

incomplete veins. There seem to be 8 good species in the Koebele-Perkins material, separable as follows:

1 Margin of head between vertex and frons, acute; anterior part of head laminate ..... (2)
1a Head anteriorly sublaminate, anterior margin thickened (4)
2 Length over 5¼ mill. ..... 3 *virgidemia*
2a Length under 5 mill. ..... (3)
3 Vertex a little longer than pronotum ..... 1 *vulturnus*
3a Vertex not longer than pronotum ..... 2 *voltumna*
4 Vertex ivory white, very sparingly speckled with palebrown ..... 4 *vanduzeei*
4a Vertex ivory white, with a basal fascia of pale-brown specks ..... (5)
4b Vertex dark, very closely speckled with pale yellowish.. (6)
5 Larger, broader ..... 5 *vaccors*
5a Smaller, more parallelsided ..... 6 *vultuosus*
6 Broader and paler ..... 8 *vappa*
6a Narrower and darker ..... 7 *vaedulcis*

Div. 1. Margin of head between vertex and frons acute, foliaceous.

1. *vulturnus*.

Head, pronotum and scutellum yellowish-brown, pronotum more or less infuscate. Eyes dark, ocelli reddish. Foliaceous part of frons and 2 spots on genae on each side, orange-red, rest of face and the prosternum black (or the frons may be entirely orange-red or entirely black except a narrow basal line). Underside testaceous. Tegmina sordid whitish, mottled with greenish brown or pale greenish or bluish-black, veins brownish yellow.

Vertex longer than pronotum, wider between the eyes than long, distinctly reflexed anteriorly, lateral margins of vertex in front of eyes short but very distinctly curved outwards before joining the arched anterior margin. Hind legs usually more or less dark.

Male: last segment truncate, a little shorter than the short pygophors.

Female: last segment slightly sinuate, a little produced medianly and laterally; pygophors about 2½ times as long as last segment, slightly shorter than ovipositor.

Length (male) 4-4¼ mill; (female) 4½-4¾ mill.

Hab. Queensland, Cairns (Aug., P.); Kuranda (Aug., P.).

2. *voltumna* sp. nov.

Closely allied to *V. vulturnus*, but vertex a little shorter, not longer than pronotum, strongly impressed transversely in the middle, basal part declivous, apical part slightly recurved, almost porrect instead of declivous as in *V. vulturnus*.

Vertex strongly, pronotum sparingly, mottled with blackish brown; scutellum marked with same colour. Tegmina heavily smudged with black. Underside black except the non-foliaceous part of frons and the basal margin (narrowly) of the foliaceous part, sordid orange. Anterior legs and bristles on the others, yellowish testaceous.

Female. Genital segment much as in *V. vulturnus*.

Length $4\frac{1}{3}$ mill.

Hab. Queensland, Kuranda, (Aug., P.).

3. *virgidemia* sp. nov.

Vertex, frons, clypeus, pronotum and scutellum castaneous, more or less clouded with blackish. Genae, lora, sterna, &c., more or less black. Tegmina yellowish testaceous, apically a little hyaline and more dilute, veins blackish brown, the colouring being more or less blotchy; the clavus subirrorate; the cells are mostly more or less marked with blackish-brown. Wings smoky, veins black. Fore legs pale, other legs more or less fulvous, longitudinally striped with black. Sternites yellowish brown, marked with darker brown.

Vertex about, or a little more than, twice as wide as long, rounded anteriorly parallel to posterior margin, extended laterally in front of the eyes about as far as posteriorly.

Female: last segment produced a little medianly, pygophors longer than ovipositor.

Length $5\frac{1}{3}$ mill.

Hab. Queensland, Kuranda (Aug., P.).

Div. 2. Margin of head blunt, subfoliaceous.

4. *vanduzeei* sp. nov.

Allied to *V. vulturnus*, but the margin of the head is not acute anteriorly, and the anterior margin immediately in front of the eyes is not (or not noticeably) divergent, before curving upwards and inwards.

Vertex, pronotum, and scutellum ivory white, more or less tinged with greenish, the vertex with a few scattered brownish

specks; pronotum obscurely mottled with greenish brown, sometimes with a whitening medio-transversely. Face black except for a few redbrown marks and the ivory-white basal margin. Sterna and pleura black (except for the more or less pale exterior half of propleura). Tegmina ivory white tinged with green, veins and in complete veins brownish. Fore legs pale, others mostly blackish; bristles pale. Sternites and genital segment pale or dark varyingly.

Male: pygophors a little more than twice as long as last segment which is bisinuate.

Length 4-4½ mill.

Hab. New South Wales, Sydney (Jan., K.).

The nymphs are not specially remarkable.

5. *vaccors* sp. nov.

Allied to the last, but the basal margin (except extreme part) with a transverse band of minute brownish reticulations. Pronotum mottled with palebrown, with a well defined undulating ivorywhite median fascia.

Male: genitalia much like those of the preceding species.

Length 4¼ mill.

Hab. Queensland, Bundaberg (Sept., Dec., K.).

6. *vultuosus*, sp. nov.

Very close to *V. vaccors*, but smaller, narrower and darker. Vertex a little shorter. Pronotum with a well marked white fascia and some black marks as well as the pale brown mottlings.

Female: last segment with 2 tiny median notches.

Length 3¾-4 mill.

Hab. Queensland, Cairns (Aug., P.); Nelson (July, P.); Kuranda (Aug., P.).

7. *vaedulcis* sp. nov.

Black; vertex, pronotum and scutellum thickly speckled with pale yellowish brown. Frons margined basally with yellowish. Tegmina pale yellowish brown heavily veined and marked with black; apex of costal cell and of the adjoining subapical white, spotshaped. Fore legs and bristles, &c., of the others, more

or less pale. Vertex not longer than pronotum, rounded in front.

Length 3-3¼ mill.

Hab. Queensland; Cairns (Aug., P.); Bundaberg (Sept.-Dec.); New South Wales, Sydney (Jan.-Feb., K.).

Nymph: Vertex laterally spinose just above the eyes.

8. *zappa* sp. nov.

Very close to *V. vacdulcis*, but paler and broader. Tegmina with a large colourless patch on the costa, &c.; apical parts largely colourless.

Length 4 mill.

Hab. New South Wales, Sydney (Jan.-Feb., K.).

Tribe Tetigoniini.

In the Tetigoniini, the male genital segments are of simple form. The last abdominal is probably the seventh. The pygophor is sometimes not visible ventrally, being covered over by the "Plates", which are not visible dorsally, except between and below the pygophor; apical of the 7th segment, there is dorsally a small semicircular plate, and ventrally a small triangular plate, which is called the "Valve"; both these may be altogether absent and their absence or presence is probably of generic value; for example, taking the careful figures in Ball's Monograph of the North American Tetigoniini, I find that the *valve* is present in *Dracculacephala* and *Helochara*, absent in *Diedrocephala*, *Tetigonia*, *Homalodisca*, *Aulacizes*, and *Oncometopia*. I am not sure that the *Plates* may not be absent sometimes.

In the females, the 7th segment is the last abdominal, the 8th is absent ventrally and only lateral margins can be seen, basally at the sides, the 9th is divided and is generally shorter than the ovipositor; the 7th is usually narrower than the preceding tergites and is very mobile, being lifted up from the apex, at right angles, so that the ovipositor can have free play.

Tetigonia.

There is no male valve in this genus (or if so, it is concealed).

1. *albida.*

Add Viti Levu, Rewa (Apr., Muir).

2. *koebelei.*

The 7th segment (female) triangularly (sides somewhat rounded) produced, the 8th segment attaining laterally about half the length of the pygophor, which has sparse dark hairs along by the ovipositor and at the apex, and very slightly exceeds the ovipositor in length.

5 and 9. *albomarginata.*

Tettigonia albomarginata Signoret 1853 A. S. E. France (3) I, 347, Pl. X, f. 4.

Tettigonia pettimolua Kirkaldy 1906 Bull. Ent. H. S. P. A., I, 321.

At the time of writing my description, Signoret's 'Revue' was unpurchasable, and I did not imagine that this species would be described as '*albomarginata*;' I have since been able to acquire, for the Station, Signoret's work and to identify Signoret's species. The colour of the tegmina, as indeed Signoret figures them, is dark metallic green, not plumbeous-black, as he writes. The species was found by Koebele on *Saccharum officinarum.*

7. *coerulèscens.*

For Signoret's reference, read: *coerulescens* Sign., 1853 A. S. E. France, (3), I, 672, Pl. XXI, f. 16.

The vertex is subangulate, and the species is probably not a true *Tettigonia.* It is not coerulescent.

The genera of this tribe may be temporarily disposed as follows:

1 Juga porrect, straight or slightly deflexed at the apex, distinctly interrupting the lateral curve of the vertex; fore tibiae distinctly sulcate or flat, sometimes dilated.....(2)

1a Juga suddenly deflexed or noticeably curved from the base, never interrupting the lateral curve of the vertex; fore tibiae subcylindric (rarely otherwise).....(26)

2 Pronotum distinctly sexangular (or more), lateral angles distinct; tegmina completely covering the sides of the abdomen .....(3)

2a Pronotum transverse, quadrangular; rarely feebly hexangular (in which case the lateral angels are rotundate); tegmina often exposing the sides of the abdomen.....(8)

3 Pronotum normal; head not shorter than the pronotum.(4)

3a Pronotum crested or tuberculate or carinate. Head shorter than the pronotum.....(6)

4 Vertex sulcate longitudinally without an articulated appendix; fore tibiae a little dilated.....(5)

4a Vertex not sulcate, longitudinally, but with an articulated, elongate apical appendix; fore tibiae not dilated.....
.....1 *Diestostemma*

5 Vertex prolonged filiformly; ocelli about as far from one another as from an eye; antennae short. Tegmina reticulate apically.....2 *Bascarrhinus*

5a Vertex not prolonged filiformly; ocelli about twice as far from another as from an eye; tegmina not reticulate. 3 *Cicus*

6 Pronotum crested.....4 *Zyzza*

6a Pronotum not crested .....(7)

7 Pronotum with 2, compressed, diverging horn-like appendages .....5 *Zyzzogeton*

7a Pronotum with 2 crescentiform tubercles.....
.....6 *Leucopepla* (type *Tettigonia bituberculata* Sign.)

8 Vertex triangular, strongly narrowed, with a filiform, nonarticulated, apical process.....(9)

8a Vertex rounded apically (or if triangular, then not produced) .....(12)

8b Vertex triangular, with a subfoliaceous (or foliaceous?) process which curves back so as almost to touch the pronotum .....7 *Wolfella.**

9 Vertex not gradually passing into the apical process, which is much narrower than the apex of the vertex proper; fore tibiae dilated.....10 *Rhaphirhinus*

9a Vertex gradually merging into the apical process; fore tibiae scarcely, if at all, dilated.....(10)

10 Vertical prolongation widening a little apically, not sulcate, truncate; vertex indistinctly sulcate.....
.....11 *Syringophora* (type *Tettigonia brevis* Walker).

10a Vertical prolongation narrowing to the apex, sulcate; vertex distinctly sulcate.....(11)

11 Pronotum posteriorly truncate.....12 *Acrobelus*

11a Pronotum posteriorly emarginate..... 13 *Catorthorrhinus*

12 Fore tibiae flat or sulcate.....(13)

13a Vertex longitudinally sulcate; pronotum nearly always distinctly narrowed in front; hind margin of propleura distinctly rounded or produced.....(18)

* 8 *Splonia* and 9 *Propetes* seem to be allied here, but I have not the description of the former and do not know either in nature.

14 Frons obtusely prominent, not longitudinally impressed; vertex not longer than its width between the eyes.....(15)

14a Frons nearly straight in profile; vertex longer than its width between the eyes.....(16)

15 Clavus with 2 veins (sometimes united in the middle for a short space).....14 *Oncometopia*

15a Clavus with one vein, which forks close to the apex and to the base.....15 *Dichrophleps*

16 Vertex not shorter than the pronotum; frons lightly convex, not gibbous; clavus with 2 veins uniting medianly.(17)

16a Vertex shorter than the pronotum; frons fairly convex or gibbous basally; claval veins distant.....16 *Cyrtodisca*

17 Vertex triangular, apex narrowly rounded, sensibly narrowed up to the apex in profile.....17 *Phera*

17a Vertex wider apically, semicircularly rounded there, sensibly narrowed in profile, with the apex obtuse.....
.....18 *Homalodisca*

18 Fore tibiae simple.....(19)

18a Fore tibiae dilated.....(22)

19 Clypeus strongly elevated, gibbous, angulate in profile.(20)

19a Clypeus convex, but not angulately gibbous, in profile....
.....19 *Aulacizes*

20 Pronotum and scutellum about equally long.....(21)

21a Pronotum narrowed anteriorly, scarcely impressed anteriorly .....22 *Amblydisca*

22 Tegmina apically rounded.....23 *Proconia*

22a Tegmina widely truncate apically.....(23)

23 Fore tibiae moderately dilated; ocelli strongly distant.....
.....24 *Acrocampsa*

23a Fore tibiae enormously roundly dilated; ocelli rather nearer to one another than to the eyes.....
.....25 *Cymbalopus* (type *Tettigonia bigibbosa* Sign.)

24 Vertex much longer than pronotum, depressed, not sulculate, lateral margins bidentate.....
.....26 *Ochrostacta* (type *diadema* Burm.)

24a Vertex not (or scarcely) longer than the not (or scarcely) transverse pronotum, lateral margins not dentate (juga slightly prominent near the eyes).....(25)

25 One vein in the clavus.....27 *Pherodes*

25a Two veins in the clavus.....28 *Acrogonia*

26 Tegmina hairy.....29 *Trichogonia*

26a Tegmina not hairy.....(27)

27 Tegmina apically reticulate; vertex mostly longer than the pronotum.....30 *Acopsis* (=*Dracculacephala.*)
27a Tegmina not, or only very slightly, reticulate. Vertex rarely as long as the pronotum.....(28)
28 Fore tibiae incrassate and compressed .....31 *Lissoscarta.**
28a Fore tibiae not incrassate or compressed.....(29)
29 Vertex obtusely rounded anteriorly, not sulcate, frons inflated; tegmina rounded apically, rarely slightly truncate. .....(30)
29a Vertex flat, sulcate, forming an acute angle with the lightly convex front: tegminally apically truncate or sinuate truncate ..... 33 *Diedrocephala*
30 Wings deeply fissured at the anal area which forms a dilated lobe. Vertex wider than pronotum.....34 *Dilobopterus*
30a Wings normal.....(31)
31 Second segment of antennae very long.....35 *Poochara*
31a Second segment of antennae short.....36 *Tetigonia.***

Tribe Megophthalmini.

The Megophthalmini contain apparently three genera, viz: *Megophthalmus*, *Paropulopa* and *Kahavalu*.

Membracidae.

Since the publication of my first Memoir, I have acquired a copy of Fairmaire's "Revue de la Tribu des Membracides" ***, which has thrown a little light on one or two points. There still remain, however, several species which I suppose belong to *Centrotypus*, but cannot determine satisfactorily at present.

Zanophara.

1. *leda* sp. nov.

=*Z. tasmaniae* (?) Kirkaldy (nec Fairm.).

Differs from *Z. tasmaniae* (Fairm., God.) as follows:

Head concolorous with pronotum, reddish-pitchy. Tegmina basally, subcostal cell, clavus, veins, &c., opaque reddish-pitchy, apically subhyaline, yellowish-ferruginous. Legs reddish-

* 32 *Sphaeropogonia* apparently is allied to this.

** With subgenera *Amblyscarta* (type *modesta* Fabr.) and *Poeciloscarta* (type *cardinalis* Fabr.) 37 *Conogonia* and 38 *Sphinctogonia* are allied to *Tettigonia*. *Phereurhinus* I do not know.

*** 1846, A. S. E. France, (2) iv, 235-320 & 479-531, Pls. 3-7.

pitchy. Ocelli a trifle nearer to one another than to the eyes. Both angles of the apex of the pronotal horns acute, the exterior one more so, the horn distinctly longer and slenderer.

Female: abdomen beneath reddish-pitchy.

Length $8\frac{3}{4}$ mill.

Hab. New South Wales, Mittagong (Jan.) arboreal.

2. *albovittata* sp. nov.

=*Z.vitta* (?) Walker, Kirkaldy.

Differs from *vitta* (Walk., God.) as follows:

Median keel of pronotum pitchy basally. Tegmina basally, anal cell of clavus apically, subcostal cell, a stripe (entire, not bifurcate) along the middle of the corium, &c., smoky ferruginous, veins ferruginous. Ocelli practically equidistant from one another and eyes.

[Third apical cell with a transverse venule on one tegmen.]

Length 6 mill.

Hab. Queensland, Bundaberg (Sept.-Dec., K.).

Acanthuchus.

As Goding remarks, the differences between *Centrotypus* & *Sertorius* seem to be very feeble. In addition, I cannot draw any dividing line between these and *Acanthuchus.*

1. *iasis* sp. nov.

Differs from *Centrotypus occidentalis* and *minutus* by the small first "discoidal," and the upwardly elevated, not small, horns.

Reddish-pitchy, pronotal keel blacker on the disk. Tegmina ferruginous, basal veins reddish-pitchy, apically ferruginous. Tibiae, tarsi and apices of femora yellow-ferruginous. Ocelli a trifle nearer one another than to the eyes, yellow brown. Horns placed much as in *Zanophara leda,* but acute and turned outwards and upwards. Pronotal process reaches to apex of tegmina.

Length 5-$5\frac{3}{4}$ mill.

Hab. Queensland, Kuranda (Aug., type), Cairns (Aug.)

2. *curyone* sp. nov.

Allied to the last, but less elongate and more robust. Redder, the pronotal keel concolorous, process ferruginous. Ocelli dis-

tinctly nearer to the eyes than to one another, yellow brown. Tibiae and tarsi reddish pitchy. Tegmina vitreous, scarcely tinted, base and subcostal cell opaque, ferruginous; third apical cell elongate, narrow, interior side curving a little towards the exterior; first discoidal hemisphaerical, two-thirds the length of the first. Horns a little farther apart basally than in *A. iasis*, and a little shorter and blunter. The venation in some examples is irregular.

Length 5 mill.

Hab. New South Wales, Sydney (Feb.).

3. *eurynomus* sp. nov.

Fairly close to the last, but the horns are shorter and more depressed. Interior margin of third apical cell straight; first discoidal cell smaller, about half as long as the second. Legs less *yellowish*-ferruginous.

Length 5 mill.

Hab. Queensland, Bundaberg (Sept.-Dec.)

4. ? *bispinus* Stal.

In the absence of species for comparison, several forms are temporarily determined as above. It seems as much a *Centrotypus* as an *Acanthuchus*.

Hab. Queensland, Cairns (July-Aug.), Brisbane (Nov.)

CLASSIFICATION OF THE FULGOROIDEA.

Stal's classification of 1866, followed almost entirely by authors since that date, although separating the various groups fairly well, places the last *seven* in a parallel series, with more or less overlapping characters, an obviously unnatural arrangement. So many of the Fulgoroid genera are unknown to me in nature, however, that I am prevented from any thoroughgoing revision and can only offer some hints.

Hansen has laid great stress on the structure of the antennal sensory organs. My own researches confirm this, but at present I do not think it is practicable. Selected forms display the characters very sharply, but in a large number, it is impossible to see anything definite at a magnification of 188 diameters, and it is impracticable to focus a compound microscope nearer, without dissection, in the case of such minute antennae as those of

many Achilini, Ricaniinae, &c., and many forms are still known only as uniques.

I have therefore used the venation principally, especially the condition of the costal vein.

I have given little value to one of Stal's principal characters, viz: the running of the anal vein into the commissure or into the apex of the clavus, as all intermediate stages are present and it separates obvious allies.

The arrangement of sensory organs on the nymphs will probably be of great value, but from lack of certain definite material I cannot elaborate certain clues I seem to have found.

The following is an *attempt* at a more natural grouping:

Fam. 1. Poekillopteridae.

Costal vein fully developed, costal area nearly always with cross veins (*). Pronotum nearly always truncate behind. Subapical transverse line or lines on tegmina. (†)

Subfamily 1. Lophopinae.

Head narrower than pronotum; labium short, stout, the last segment short. (The antennal sensory organs appear to have an encircling of a few upright spines). Pronotum basally truncate. Costal vein fully developed, costal area with cross veins. No properly defined subapical transverse line or lines on the tegmen. Clavus not granulate. Hind tibiae spinose. First segment of hind tarsi short and stout.

Embraces 12 genera, the 7 established or confirmed by Stal, as well as *Astorga*, *Brixioides*, *Bisma*, *Jivatma* and *Pitambara*. Distant describes species in *Serida* and *Zamila*, appearing to have overlooked the fact that Stal has cited *Zamila* as a synonym of *Pyrilla*, and stated that *Serida* was not to be distinguished from *Lophops*. The structure of the head and the venation exclude *Kusuma*, *Varma* and *Padanda* placed here by Distant.

Subfam. 2. Tropiduchinae.

Clavus not granulate. Pronotum tricarinate, emarginate behind. Hind tibiae spinose, first segment of hind tarsi usually somewhat long.

* Except *Ossa*, *Tambinia*, and etc.

† Except the *Lophopinae*.

Tribe 1. Tambiniini.

Costal area very narrow, not veined transversely. *Isporisa*, *Colgorma*, *Ossa*, *Tambinia* and perhaps *Paricana*, &c.

Tribe 2. Tropiduchini.

Costal area broad, veined transversely. *Kusuma*, *Varma* and *Baruna* (the two first placed by Distant among the Lophopidae to which they have no resemblance, superficial or otherwise); *Conna*, *Elica*, *Rhotola*, *Daradax*, *Ficarasa* and *Epora*; *Stacota*, and *Tropiduchus*, *Eodryas* (*), *Peltodictya*, *Vanua*, *Rhinodictya* and *Peggioga*, and *Plegmatoptera*, (the latter placed by Stal in the Dictyophorini!).

Subfam. 3. Ricaniinae.

Clavus not granulate. Pronotum unicarinate, emarginate behind. Hind tibiae spinose, first segment of hind tarsi usually rather short.

Tribe 1. Bladinini (=Nogodini auctt.)

Frons not wider than long, lateral margins of clypeus keeled. This runs very close to certain Tropiduchini.

Tribe 2. Ricaniini.

Frons not longer than wide, lateral margins of clypeus keeled.

Subfam. 4. Poekillopterinae.

Clavus granulate; hind tibiae spinose. Cross veins in costal area, and unusually a transvere line on the apical part of the tegmen.

Tribe 1. Poekillopterini (=Flatinae).

Tribe 2. Phalaenomorphini (=Flatoidinae).

Family 2. Issidae.

Costal vein usually developed, tegmina often coriaceous and reduced; clavus not granulate. Sensory organs on antennae not surrounded by spines.

* New name for *Epora* Mel. 1903 nec Walker, 1857, which is allied to *Kusuma* (Distant.) Melichar has described and figured it; type *melichari*

Subfam. 1. Amphiscepinae.

Costal vein apparently not developed, tegmina Poekilloptera-niform, much reticulated as a rule. Hind tibiae not spinose. Frons not angulate laterally. There are only about 5 genera in this little group, *Amphiscepa* (=*Acanalonia*), *Chlorochara*, *Thiscia*, *Philatis* and *Parathiscia*.

Subfam. 2. Issinae.

Costal vein fully developed, or if not then the tegmen more or less coriaceous, with reduced venation. Hind tibiae spinose. Frons not angulate laterally.

This large group of nearly 80 genera runs very close to the Amphiscepinae on the one hand and to the Poekillopterinae on the other.

Subfam. 3. Eurybrachyinae.

Costal vein rarely not developed. Hind tibiae spinose. Frons angulate laterally (except *Gedrosia*). Tegmina usually coloured and opaque. Distant has placed an intrusive 'd' in this name: and places the group next to the Fulgorinae, probably because the tegmina are coloured.

Family 3. Tetigometridae.

This small family is usually placed among the Issinae. It differs from all the preceding by the segmented antennal bristle, the peculiar form of the antennal sensory organs and the general Tetigonioid appearance.

Brachyceps, *Hilda*, *Egropa*, *Eurychila*, *Mitricephalus* and *Tetigometra*.

Family 4. Fulgoridae.

Claval vein not granulate; costal vein not developed. Hind tibiae nearly always spinose, without a mobile spur. Sensory lobes present on antennae, bristle not segmented.

Subfam. 1. Cixiinae.

Anal vein of wing not reticulate.

Tribe 1. Cixiini.

Often 3 ocelli. Tegmina not reticulate apically, the anal vein runs into the commissure.

Tribe 2. Achilini.

Doubtfully distinct from Cixiini and only retained for convenience. Two ocelli always; the anal vein runs into the apex of the clavus. *Chroneba*, *Kirbyana* and *Melandeva* placed in the 'Cixiinae' by Distant, do not agree with his characters, but belong here. *Kimara* and *Paruzelia* perhaps belong here.

Tribe 3. Dictyophorini.

Not easily distinguished from the preceding by words, but of different habitus. Tegmina usually reticulate apically.

Augila (placed by Distant in the Issinae), *Lausaba* and *Monopsis* (placed by Distant in the Tropiduchinae) belong here. In *Lausaba*, the anal vein runs into the apex of the clavus.

Subfam. 2. Fulgorinae.

Anal area of wings reticulate. Tribes Fulgorini, Aphanini and Omalocephalini.

Fam. 5. Asiracidae.

Hind tibiae with a mobile spur; antennal sensory lobes absent, bristle segmented; costal vein not developed, clavus not granulate.

Fam. 6. Derbidae.

Clavus granulate (except in a few forms); anal area of wings (in most forms) with a stridulatory area. Hind tibiae without a mobile spur. Antennae often very remarkable, bristle not segmented. Costal vein not developed. Last segment of labium rarely otherwise than annuliform.

Vekunta, placed by Distant in the Achilinae, is a Derbid.

"*Hicracia*" *walkeri* Sign., is very evidently not a *Hicracia* at all. I am of the opinion that it forms a group near there somewhat intermediate between Issinae and Tropiduchinae, together with *Karna*, *Amfortas*, *Hicracia*, *Grynia*, as well as *Flavina* and *Nilalohita*, (the two latter placed by Distant in the Issinae) and perhaps *Padanda* (of Distant's Lophopidae!). Signoret's species forms the new genus *Dolia*, distinguished from *Hicracia* by the

greater number of tibial spines. It seems to be near *Flavina*, but the face is very different; it seems also near *Nilalohita*, but the clypeus is differently formed. Type *walkeri* Sign.

There seem to be therefore, in the Fulgoroidea, four principal types:

1. The Poekillopteroid, in which the costal vein is well developed. While such forms as *Lophops* and *Flata* seem little allied, yet the Ricaniinae form a link which it is hard to break.

2. The Issoid, in which the costal vein is usually developed. I think the Amphiscepinae (including *Acanalonia*, &c.) clearly belong here and not to the Poekillopteridae. *Tonga* is a remarkable form of uncertain affinities; I placed it at first among the Poekillopteridae. The Tetigometridae form a distinct family of apparently "degraded" Issidae.

3. The Fulgoridae have the costal vein obsolescent except basally. The Asiracidae are apparently developed from forms like *Oliarus*, but their many peculiarities render their separation necessary.

4. The Derbidae are probably polyphyletic, *Nisia*, *Lamenia* and some other forms approaching the Cixiini and Achilini.

The first and second groups apparently oviposit on the outer surface of leaves, while the third make an incision in the leaf or stem and place the eggs inside. Of the Derbidae, no eggs have, I believe, been found in nature.

Mr. Distant has recently criticized parts of my former memoir, relating to the Fulgoroidea, in the A. M. N. H. (7) XIX, 395-416 (1907)*. Those acquainted with Mr. Distant's works will, I am sure, wonder that Mr. Distant should complain of incomplete and rudimentary descriptions in other workers. I have considered his synonymical propositions in their several places. I may point out here however that Mr. Distant has so "carefully studied" my memoir, that he has misunderstood the scope of the entire work, the nature of which is plainly indicated even on the title page of the parts.

Poekillopteridae.

Lophopinae.

Astorga.

Stal (1866 Hem. Afr. IV) places the "Lophopida" among those groups in which the anal vein runs into the apex of the clavus

* See my reply op. cit., later.

or into the sutura clavi. Melichar (1903 Hom. Ceylon) incorrectly characterizes it as "Head and eyes together as wide as the pronotum" (added to Stal's character of the anal vein running into the claval suture), although he includes therein *Elasmoscelis radians* and *platypoda* in which the head is much narrower than the pronotum. *Astorga* bears a very close general resemblance to *Lophops,* but the anal vein clearly runs into the commissure; however, it is best located in the Lophopinae at present. It may be distinguished from *Lophops* by the form of the tegmen.

1. *saccharicida.*

On Pl. XXVIII, f. 11, of my former contribution, an ocellus should have been depicted between the apex of the antennae and the anterior margin of the eye, a little inwards; a nymph of this species is figured on Pl. I, figs. 8-9.

I do not regard *Kusuma, Varma* and *Padanda* of Distant as Lophopid.

Tropiduchinae.

The following are now figured:

Rhinodictya quaesitrix, Pl. IX, figs. 12-13.

Peltodictya kurandae Pl. VIII, figs. 3-4.

Distant (1907 A. M. N. H. (7) XIX, 416) cites *Peltodictya* as synonymous with *Ficarasa* Walker. In the latter, however, the apical cells of the tegmina are reticulate, while there are no cross veinlets at all in *Peltodictya* from the apical margin right up to the subapical line.

It may be useful to point out that Mr. Distant's correction of the misprint in the reference to the figures of *Vanna viticnsis* is itself incorrect. As mentioned in the 'Errata' at the commencement of the volume, *Vanna viticnsis* adult is figured Pl. XXVIII, figs. 7-9 and the nymph on Pl. XXVII, figs. 6-7.

The following have been described as Tropiduchinae:

Ficarasa australasiae Distant 1907, op. c., 287, Queensland (very probably belongs to my genus *Peltodictya*).

Magia subocellata Distant, op. c., 288, do.

I regard the following genera as Tropiduchine:

Plegmatoptera, placed in the Dictyphorinae by Stal,

Kusuma and *Varma,* placed by Distant in the Lophopinae. I do not regard the following genera as belonging to this sub-

family, viz: *Lcusaba, Hiracia, Karna* and *Paruzclia.* I also follow Ashmead and Swezey in placing *Monopsis* Spinola (=*Nonopsis* Distant) among the Dictyphorinae; it certainly is not Tropiduchine as Distant pretends. (See A. M. N. H. (7) XVIII, 356).

Ricaniinae.

Euricania.

tristicula.

Hab. Viti Levu, (Mar., K.), Rewa (Dec., Apr., M.).

Plestia.

1. *marginata.*

Plestia do. (Montr.) Melichar 1898 Ann. Mus. Wien. XIII, 294, Pl. XII, f. 17; Pl. XIV, f. 1.

Hab. Viti Levu, Rewa (Feb.-Apr., M.).

The parts described in previous descriptions as yellow, are pale opaque green, in fresh examples.

Gactulia.

Distant (p. 394) states that the head is considerably narrower than the pronotum. This is incorrect as a generic character, for in *G. chrysopoides*, the eyes project very slightly beyond the pronotum; Distant's figure (203) also scarcely bears out his diagnosis, moreover the clypeus is *not* carinate, as indeed Stal also states.

Poekillopterinae.

Siphanta.

The Australian species may be disposed as follows:

1. Vertex distinctly longer than wide.....1 *galcata*
1a. Vertex not longer than wide.....2
2. Vertex scarcely (if at all) wider than long; species 8 mm. long (or more).....3
2a. Vertex nearly (or quite) twice as wide as long; [tegmen with dark scattered granules]; species not more than 8 mm. long. 7
3. Reddish (or blackish) granules on tegmen, especially on clavus. 4

3a. No reddish (or blackish) granules on tegmen (*).....6
4. Vertex angulate, sutural angle of tegmen rounded.....5
4a. Vertex rounded, sutural angle acute.....2 *acutipennis*
5. Vertex longer than pronotum, frons scarcely longer than wide (typically with a yellow stripe on tegmen).....3 *toga*
5a. Vertex and pronotum equally long, frons twice as long as wide. .....3a *patruelis*
6. Anterior margin of pronotum entire (truncate or rounded) ..... 4 *acuta*
6a. Anterior margin of pronotum notched minutely in the middle ..... 5 *brevicceps*
7. Species under 6 mm. long .....6 *granulicollis*
7a. Species 6 mm. or over 8
8. Colour of tegmina pinkish testaceous.....8 *granulata*
8a. Colour of tegmina orange yellowish.....7 *lucindae*
8b. Colour of tegmina greenish or yellowish green.....9
9. Granules on corium few, small and inconspicuous; pronotum without a red line; disk of scutellum with one green line .....9 *subgranulosa*
9a. Granules large and conspicuous, pronotum with a red longitudinal line, disk of scutellum with three green lines.... ..... 10 *sensilis*

N. B. *rubra* Schmidt remains unrecognizable to me.

1. *galeata.*

Pl. V, fig. 3 & Pl. VI, figs. 3-4.

2. *acutipennis.*

Pl. III, fig. 1 & Pl. VI, figs. 1-2.

The reddish and blackish granules on the tegmen, as well as some usually conspicuous crimson spots, distinguish this at once from *S. acuta.*

3. *toga*

Pl. III, fig. 3 & Pl. VII, fig. 11.

The Bundaberg record should be deleted, and on p. 455 line 3, for "tatter" read "latter."

* This does not refer to the exceedingly minute greenish, yellowish or brownish granules numerous in each (or most) of the reticulations on the tegmen.

4. *acuta.*

Pl. III, figs. 2 & 4: Pl. VI, figs. 13-14.

This species is also a little variable as regards the apical margin of the tegmen. In some examples it is slightly but distinctly concavely emarginate, in others slightly convex, and it varies a little as regards the prominence of the sutural angle. The ova in situ and the last nymphal instar are figured on Pl. VI, figs. 17-20.

5. *breviceps.*

Pl. III, fig. 2.

Allied to *acuta*, not to *acutipennis*.

6. *granulicollis.*

Pl. IV, fig. 2 & Pl. VI, figs. 7-8.

The vertex, in what I suppose to be this species, is usually obtuse-angled, but varies from that to being distinctly rounded. The scutellum is shorter than in the other species, the disk is typically brownish-red with one longitudinal green stripe.

Length: 5 to 5⅞ mill.

Hab. New South Wales, Sydney (Jan.-Feb.) Mittagong (Jan.)

The *S. minuta* of Melichar is perhaps a variety of this, introduced into Saint Helena. In all the species of *Siphanta* I have seen, the apical margin of the tegmen is always spotted with crimson, though sometimes extremely faintly, as probably is the case with *S. minuta*.

7. *lucindae.*

Pl. IV, fig. 3 & Pl. VI, figs. 5-6.

8. *granulata.*

Pl. IV, fig. 4.

Very close to the last, but yellower, and more granulate on the corium.

9. *subgranulosa.*

(=*granulicollis* Kirkaldy olim, nec Stal)

Pl. V, fig. 1 & Pl. VI, f. 12.

Hab. Queensland, Cairns (July-Aug., P.), Bundaberg (June P.). This possibly =*S. rubra* Schmidt.

10. *sensilis,* sp. nov.

Pl. IV, fig. 1, & Pl. VI, figs. 15-16.

Allied to *granulicollis,* but larger, the corium with more granules which are also larger individually. Pronotum green with one red stripe. Disk of scutellum brownishred with three green stripes.

Length 6 to 6½ mill.

Hab. Queensland, Cairns (July-Aug.).

Thanatochlamys gen. nov.

Allied to *Siphanta,* but the vertex is short, narrow, flattish but a little swollen along the middle, very slightly ascendant, not granulate. Frons elongate, with 5 strong keels. Clypeus not, or obtusely, keeled at the side. Pronotum granulate, strongly keeled medianly. Scutellum shining, not granulate, flattish though a little inclined to be swollen anteriorly. Venation different, angles of tegmina not prominent. Tibiae with one spine.

1. *tristis* sp. nov.

Pl. V, fig. 4 & Pl. VI, figs. 9-10.

Vertex and pronotum olivaceous with paler keels and granules. Frons and scutellum fuscous with paler keels. Clypeus, legs, abdomen beneath, etc., fuscotestaceous. Clavus olivaceous with blackish granules, corium dark fuscous with paler veins and blackish granules basal two thirds of exterior margin paler.

Length 7¾ mill.

Hab. Queensland, Cairns (July).

Phantiopsis.

Phantiopsis Melichar 1905 Ann. Mus. Hung. III, 474.
=*Aphanophantia* Kirkaldy 1906, op. c., 458.

1. *australiaca.*

Pl. VII, figs. 4-6.

Phantiopsis australiaca Mel., l. c., 475.
=*Aphanophantia cuscuticida* Kirk., l. c., 459.

Issidae.

This family contains three subfamilies:

1 Face not laterally angulate.....(2)
1a Face laterally angulate..... 3 Eurybrachyinae
2 Hind tibiae with a spine or spines.....1 Issinae
2a Hind tibiae spineless in adults (but spinose in nymphs).... ..... 2 Amphiscepinae

Issinae.

The following table is amended from the first memoir:

1 Tegmina reaching at least to apex of abdomen, clavus sutured off from corium .....(2)
1a Tegmina in the form of narrow, elongate straps, reaching far beyond the apex of the abdomen; wings rudimentary; hind tibiae with two spines.....10 *Alleloplasis*
1b Tegmina abbreviated, clavus not sutured off from corium; wings rudimentary; hind tibiae with one spine..... ..... 9 *Gelastissus*
2 Wings reaching at least to apex of abdomen.....(3)
2a Wings absent or rudimentary.....(6)
3 Appearance Cercopoid; wings deeply incised apically...(4)
3a Appearance Poekillopteroid; wings not incised apically.... ..... 4 *Tylana*
4 Frons longitudinally carinate, sometimes feebly; inner fork of radial vein practically forming a straight line with the basal stalk of the vein .....(5)
4a Frons polished, not carinate; inner fork of radial forming an obtuse angle inwardly, with the basal stalk of the vein.... ..... 3 *Phacopteryx*
5 Tegmina less than 2½ times as long as broad, inner fork of radial vein not reforking till just basal of the apical margin ..... 1 *Chlamydopteryx*
5a Tegmina over 3 times as long as broad, inner fork of radial reforking well basal of the apex of the clavus..... ..... 2 *Apsadaropteryx*
6 Hnd tibiae with 1 spine .....5 *Lipocallia*
6a Hind tibiae with 2 spines.....(7)
7 Hind margin of pronotum straight.....(8)
7a Hind margin of pronotum widely emarginate.....6 *Bilbilis*
8 Frons basally truncate, with a keel along the middle..... ..... 7 *Hysteropterum*

8a Frons medianly emarginate at base, with a median and a circular keel ..... 8 *Orinda*

Chlamydopteryx gen nov.

Allied to *Sarima* Mel., but the venation is different. Head and pronotum not at all flush. Circular keel of frons continuous and the apico-lateral part of frons a little lobate. Frons granulate around the keel. Fore tibiae somewhat widened. Type *vulturnus*.

1. *vulturnus*.

Pl. VII, figs. 15-16.

Issus vulturnus Kirkaldy.

2. *ridicularius*.

Pl. VII, figs. 12-14.

Issus ridicularius Kirkaldy.

In both these species, part of the frons is visible dorsally, the base of the rounded basal carina being visible above as a straight keel; vertex almost truncate basally. The outer branch of the radial vein is strongly arched basally. In *C. ridicularius*, the clypeus is striate, a character however probably not very important.

5. *eurobium* sp. nov.

Allied to the last, but the colour is browner. Vertex more transverse, the apical margin almost truncate, frontal keels very feeble. Outer branch of radial angularly bent near the base, as seen from above.

Male: pygophor as in *C. ridicularius*.

Length 5 mill.

Hab. Queensland, Cairns (August).

Apsadaropteryx gen. nov.

Allied to *Sarima*, but the subcircular keel of the frons is continuous except at the apical margin and the clypeus is slightly striate; the veins of the tegmen are strongly marked and the inner fork of the radial vein reforks well basal of the apex of the clavus. Fore legs not widened.

1. *elongatulus.*

Pl. VII, figs. 9-10.

Issus elongatulus Kirkaldy, l. c.

Phaeopteryx gen. nov.

Differs from the above by the exterior branch of the radial vein being almost rectangularly bent near its base; the subcostal cell apical of this bending is very narrow, with numerous transverse veins. Frons broader than long, convex medianly, no keels except the transverse basal one, but the lateral margins are flat, posterior margin emarginate. Base and lateral margins of frons, the pronotum, &c., strongly granulate.

1. *sidnicus.*

Pl. VII, figs. 20-1.

The nymph of this is figured (figs. 17-19).

Orinda gen. nov.

Allied to *Hysteropterum,* but the frons basally is emarginate with acute lateral angles, and the venation is quite different. Vertex transverse, truncate apically and basally. Costal margin roundly dilated at the base, then subconstricted. Wings rudimentary.

1. *lucindae.*

Sarnus lucindae Kirkaldy, op. c., 440.

Tylana.

Tylana (Stal) Melichar 1906 Abh. Zool. bot. Ges. Wien III (pt. 4) p. 198.

1. *acutipennis.*

Pl. VII, figs. 1-3.

Lollius acutipennis Kirk.

This is not *Tylana acutipennis* Mel., which is differently coloured and has the submedian frontal keels uniting with the median

well apical of the base of the frons (and not almost at the base) and more arched laterally. (*)

2. *angustifrons.*

Lollius angustifrons Kirkaldy.
Tylana conspurcata Melichar, l. c., 203.

Of unrecorded Australian forms, I now add *Bilbilis modestum* Stal, from "North Australia" and New South Wales.

Mr. Muir did not collect any Issinae in Fiji, but the following are noted by Melichar:

Tylana intrusa Melichar, and *T. orientalis* Mel., from Ovalau, and *T. piceus* (Walker) from Viti Levu, the last named also from Aru and Papua. The Genus *Tylana* has an interesting distribution viz.: North America (1 sp.), Borneo (1 sp.), Celebes (2 sp.), Papua and neighboring isles (6 sp.), New Caledonia and Lifu (3 sp.), Australia (2 sp.), Fiji (3 sp.), Samoa (1 sp.), and the Mascarene Isles (2 sp.).

In Bulletin IV of this division (1907), I described one new Issine from North America, and doubtedly identified another. I have been able since to confirm these by Melichar's Monograph, *Bruchomorpha mormo* being allied to *B. pallidipes* Stal, but quite unicolorous, except part of the legs, as described. *Picumna ovatipennis* may be confirmed.

Eurybrachyinae.

I must leave my former notes in the same unsatisfactory state, as I still do not know what Stal meant to define precisely by his genus *Platybrachys.*

Recently (1906 A. M. N. H. (7) XVIII) Distant has described one genus and 3 species from Queensland, as new. *Yarrana* 206, seems to differ from *Dardus* Stal, only by the much longer tegmina.

1 *sinuata* 207; Queensland, Townsville, Karanda (sic!) and Cairns.

2 *continuata* 207; Queensland, Townsville.

Olonia Stal.

6 *marginata* 206; Queensland.

Distant (1907 op. c., XIX, 415) very confidently synonymizes *Dardus immaculatus* Kirkaldy with *D. obscurus* Distant. The

* For *Tylana acutipennis* Mel., which is a Bornean species, I propose the name *T. dyakana.*

latter however has the face and legs pale sanguineous, while in the former the face is uniformly dark brown (except for some pale and clypeal specks), and the hind femora only are sanguineous, the rest of the legs being piceous except as indicated in my description.

Fulgoridae.

Cixiinae.

Distant, following Melichar, places *Kirbyana* in the "Cixiinae," despite the fact that the anal vein reaches the apex of the clavus, that there are only two ocelli and that the clypeus is laterally carinate, a combination of characters which according to Distant himself, would place the genus in the "Achilinae." He also places the genus *Kinnara* in the "Achilinae," but there are three ocelli here and the anal vein scarcely reaches the apex of the clavus; it therefore belongs to the "Cixiinae."

Tribe Cixiini.

The Australo-Fijian genera fall into groups as follows:

1 Antennae elongate, distinctly visible beyond the lateral margins of the head ..... 4 *Solonaima*
1a Antennae minute ..... (2)
2 Scutellum with 5 keels ..... (3)
2a Scutellum with 3 keels ..... (4)
3 Vertex extending but little beyond the eyes, face not foliaceous ..... 1 *Oliarus*
3a Vertex extending well beyond the eyes, face subfoliaceous laterally ..... 2 *Urvillea*
4 Frons with 3 distinct ocelli ..... (5)
4a Frons with 2 ocelli ..... (6)
5 Tegmina widely rounded towards the apex ..... 6 *Leiriocessa*
5a Tegmina long and narrow ..... 5 *Myndus*
6 Head produced in front of eyes, vertex elongate..... (7)
6a Head scarcely produced, vertex not elongate..... (10)
7 Tegmina of usual *Cixius*-form..... (8)
7a Tegmina (as seen dorsally) strongly compressed .... (9)
8 Tegmina not granulate..... 3 *Nesocharis*
8a Tegmina strongly granulate ..... 7 *Carolus*

9 Genae very clearly separated posteriorly, lateral margin of frons remote from eyes, ocelli and antennae..... ..... 8 *Gelastocephalus*

9a Genae much narrowed posteriorly, lateral margin of frons close to eyes, ocelli and antennae .....9 *Nesochlamys*

10 Head dorsally doubly carinate transversely..10 *Leptochlamys*

10a Head not carinate transversely below the front margin..(11)

11 Tegmina of usual *Cirtus*-form.....11 *Calamister*

11a Tegmina strongly compressed (as seen dorsally).....(12)

12 Base of vertex slightly emarginate.....12 *Australoma*

12a Base of vertex truncate .....(13)

13 Pronotal emargination anteriorly nearly touching base of vertex ..... 13 *Dystheatias*

13a Pronotal emargination not nearly touching base of vertex.. ..... 14 *Quirosia*

Oliarus.

Four species are now added, 3 from Fiji, and 1 from Queensland. I regret that I have not had time to study the genitalia of the species, as these present good characters. The following table comprehends the 12 Australo-Fijian species now known.

1 Apices of the first and second segments of the hind tibiae each with about twenty small spines which do not (or at least only one or two of them) extend beyond the apical margin of the segment (subgenus *Nesopompe* nov.)..(2)

1a Apices of these segments with from 5 to 8 (according to the species) larger spines which mostly extend well beyond the apical margin of the segment (*Oliarus* sens. str.)..(3)

2 Tegmina hyaline (type of subgenus).....11 *felis*

2a Tegmina hyaline, the apical fourth smoky....12 *saccharicola*

3 Axillary vein of tegmen running into anal vein, basal of the middle of the latter .....(4)

3a Axillary running into anal at, or apical of, the middle of the latter ..... (8)

4 Axillary very short, not quite half (taken from its curving or angulation at the commissure) the length of the stalk of the anal .....1 *laertes*

4a Axillary long, more than half the length of the stalk of the anal ..... (5)

5 Tegminal veins more or less thickly granulate .....(6)

5a Tegminal veins not, or obsolescently, granulate..2 *kampaspe*

6 Veins basal of the membrane dark.....3 *asaica*
6a Veins basal of the membrane pale, with dark granules..(7)
7 Head and scutellum pale .....4 *talunia*
7a Head and scutellum black and castaneous.....5 *lilinoe*
8 Vertex much narrower at the base than an eye.....(9)
8a Vertex scarcely, or not, narrower at the base than an eye .....(10)
9 Lateral margins of vertex forked at the anterior margin of the eyes, so that the anterolateral margins of vertex do not reach the apical margin and are connected therewith by 2 very short, parallel, keels .....6 *tasmani*
9a Lateral margins of vertex forked well below the anterior margins of the eyes, the inner margins meeting acutely below the anterior margin of the head dorsally and continuing thereto .....7 *alexanor*
10 Tegminal veins granulate .....9 *sponsa*
10a Tegminal veins not granulate 11
11 Tegminal cross veins thickened, but not widely suffused.. ..... 9 *lubra*
11a Tegminal cross veins strongly and widely suffused..... ..... 10 *phelia* *

5. *lilinoe* sp. nov.

Like a large, dark *talunia,* but the venation is different. Differs from *O. lacrtes* by the veins of the tegmen basal of the membrane being pale (with dark granules), not dark, consequently the dark hue of the suffused cross veins shows up more prominently; also by the greater length of the axillary vein. It is allied to *O. asaica,* but is much smaller, the tegmina are paler and the vertex is much narrower. Frons and clypeus dark fuscous, median keel and lateral margins pale ochraceous. Scutellum dark fuscous; the median keel, the lateral keels and the space between them, and the extreme lateral margins ferruginous.

Length 5¾ mill.

Hab. Queensland, Cairns (July, P.).

6. *tasmani* sp. nov.

Allied to *O. alexanor,* but the head form is different and the tegminal granules feebler. Blackish, keels dark ferruginous,

* Distant has recently described two species, *O. dingkana* and *O. lubra* from Queensland (1907 A. M. N. H. (7) XIX, 282), but it is not possible to identify them from the descriptions. N. B. Since the above was in proof, Distant has renamed his ||*lubra*, "*incerta*," an excellent name judging by his description.

frons ferruginous, sometimes suffused with fuscous. Pronotum pale, lateral margins fuscous. Tegmina hyaline, veins mostly pale with fairly closely set but not prominent fuscous granules. Subcostal vein yellowish fuscous; stigma dark fuscous; apical veins and subapical transverse veins suffusedly dark fuscous. Wings hyaline, veins dark fuscous. Legs bright yellow, obscurely annulated with fuscous. Vertex as in *O. alexanor*, but the lateral margins are forked at the anterior margin of the eyes, so that the anterolateral margins of vertex do not reach the apical margin and are connected therewith by 2 very short parallel keels. Labium reaches the hind coxae. There are 6 spines each on the apex of the 1st and 2nd segments of the hind tarsi.

Male: sterna and abdomen more or less piceous, hooks, &c., pale.

Length (male) 5½ (female) 6⅛ mill.

Hab. Viti Levu, Rewa (Mar., Muir).

The scutellum is sometimes ferruginous between the keels.

The species is named after Tasman, who discovered the Fijian archipelago.

9. *lubra*.

Pl. VIII, figs. 7-9.

A rather smaller race, the males measuring as little as 6 mill., has been found in Viti Levu by Muir (No. 7) in Ba (Jan.), Rewa (Mar.-May) and Navua (Feb.) on Breadfruit, (*Artocarpus incisa*); they may be termed var. *vitiensis*.

10. *phelia*.

Pl. VIII, figs. 10-12.

11. *felis*.

Pl. VIII, figs. 5-6.

12. *saccharicola* sp. nov.

Allied to *O. felis* but distinguished by the smoky apical fourth of the tegmina.

Blackish; keels of vertex, lateral keels of frons and clypeus, legs, &c., pallid; hind femora more or less fuscous; keels of scutellum (usually) and median keel of frons ferruginous. Pro-

notum pale, latral margins fuscous. Tegmina milky hyaline, apical fourth smoky, veins of basal two-thirds pale, not granulate, veins of apical third darker, with dark fuscous granules. Wings smoky hyaline, veins fuscous. Abdomen more or less blackish.

Length (male) 4½ mill.

Hab. Viti Levu (Muir No. 81), Rewa (Dec., M.), *on Saccharum officinarum.*

Urvillea gen. nov.

The characters of *Oliarus,* but the vertex extends well beyond the eyes; frons and clypeus apparently fused but there is an ocellus in the middle of the facial keel; the face is ampliate and foliaceous in the middle laterally. Tegmina not granulate. Superficially like *Occleus* but the posterior femora are spined, and the venation is Oliarine. This genus the type of which is *U. melanesica,* is named after the celebrated traveller Dumont d'Urville, who made the first chart of the Fijian group.

1. *melanesica,* sp. nov.

Black; head keels (blackened at anterior margin), the foliaceous part of the face, labium (except the blackish fourth segment), legs (except the tarsi which are partly dark), tegulae, &c., yellow or brownish-yellow, lateral margins fuscous. Scutellar keels dark ferruginous. Tegmina hyaline, veins on basal two-thirds brownish-yellow, subcostal and those on apical third dark fuscous; cross veins a little suffused, apical margin narrowly smoky, stigma dark fucous. Vertex parallelsided, nearly four times as long as the basal width extending in profile nearly one-half the length of an eye in front of the latter. First segment of hind tarsi with 6 teeth apically, second with 5. Labium reaching to hind trochanters.

Length (male) 7- (female) 8 mill.

Hab. Viti Levu, Rewa (Mar.- Nov., M.).

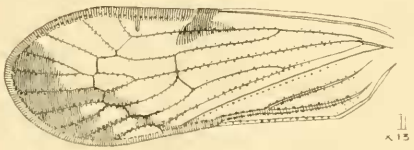
Nesocharis, gen. nov.

Apparently not very closely related to any known Cixiine. It differs from *Cixius* by the venation and the simple legs. From *Occleus* it differs by the basal cell emitting 3 veins.

Vertex excavated, posterior margin acute angularly emarginate. Face elongate diamond-shaped (flat), more than twice as long as wide, widest about the antennae, subconstricted at the

frontoclypeal suture which is a little obsolescent; no vertical fossettes. Pronotum acute-angularly emarginate posteriorly. Scutellum with three straight keels. Subcostal margin of tegmina sinuate near the base and also a little apical of the middle. Internal cell of clavus granulate.

1. *kalypso*, sp. nov.



(Text figure 1).

Black; head keels (anteriorly blackened), face, antennae, pronotum, sterna and legs whitish. Tegmina hyaline tinged with yellowish, subcostal vein near the base and from the stigma apically, radial vein and its forkings, stigma, apex anteroobliquely, claval vein apically &c., smoky often a little suffusedly. Vertex extending a little in front of eyes, lateral keels somewhat convergent anteriorly, forking about the apical margin of the eyes. Labium reaching nearly to apex of hind femora.

Length (female) $4\frac{1}{2}$ mill.

Hab. Viti Levu, Rewa (Mar. M.).

Solonaima solonaima.

Pl. VIII, fs. 13-15.

Myndus.

Myndus Stal. 1862, Berlin Ent. Zeit. VI.

A North American genus, the Japanese species described by Uhler being, according to Matsumura, an *Oliarus*. The species now described is possibly not a true *Myndus*, but agrees in all apparent essentials.

1. *vitiensis* sp. nov.

Blackish; vertex soiled brownish-yellow, pronotum whitish; keels and lateral margins of scutellum sordid ferruginous. Tegmina sordid hyaline, basal veins pale, subcostal vein and apical third with veins dark fuscous suffusedly, and with 2 curved dark

fuscous streaks. Sterna and legs sordid brownish yellow. Abdomen blackish brown. Vertex with lateral margins slightly converging apically, extending a little in front of the eyes. Frons as broad as long, lateral margins strongly reflexed.

Length (female) $3\frac{3}{4}$ mill.

Hab. Viti Levu, Navua (Feb., M.).

Leiriocssa gen. nov.

Apparently allied to *Brixia,* but the vertex is broader than an eye and well produced anteriorly. Antennae not exserted, second segment globular. Pronotum of very different structure. Tegmina apically rounded, distinctly widening towards the apex. Hind tibiae with 3 larger and sometimes one or two smaller spines. Type *tortricomorpha.*

1. *tortricomorpha* sp. nov.

Pl. XXVII, figs. 9-21.

Fusco-testaceous, irregularly suffused with fuscous. Disk of scutellum tinged with ferruginous, a pale line down the middle, darker fuscous outside the lateral keels. Ocelli ruby-red. Tegmina subhyaline, veins pale with dark granules and an ashy fuscous band, etc., as in the figure.

Length of body, $4\frac{1}{2}$ mill; expanse of tegmina nearly 11 mill.

Hab. Queensland, Cairns (Aug.), Kuranda (Aug.)

2. *vitiensis* sp. nov.

Differs from the above by the more elongate and differently patterned tegmina.

Head, pronotum and scutellum sordid piceofuscous, underside and antennae pale, 3rd ocellus rubid. Fore and middle femora fuscopiceous (except the extreme apex and base), tibiae of the same suffused with fuscopiceous. Tegmina hyaline tinged with cinereous, veins cinereous whitish, basal half with blackish-brown granules, apical half not granulate (except a few inwardly); two or three blackish-brown markings near the base and a transverse band across the corium a little basal of the middle. Wings milky hyaline, veins pallid. Labium reaches well beyond hind coxae.

Length $5\frac{3}{4}$ mill.

Hab. Viti Levu, (Mar., Muir's No. 142), on a native tree in the bush.

Leptochlamys gen. nov.

Somewhat allied to *Calamister*, but the head is different and the tegmina are strongly compressed.

Vertex transverse, scarcely extending so far as the anterior margin of the eyes, part of the frons visible dorsally. Head laterally strongly carinate (a little foliaceously on the frons), frons and clypeus strongly keeled medianly, vertex strongly keeled anteriorly transversely, and there is a transverse keel between this and the base but no longitudinal keel. Antennae very short. Ocelli present. Pronotum deeply emarginate posteriorly. Scutellum with 3 keels.

compressa sp. nov.

Pl. VIII, figs. 1-2.

Brownish testaceous, a little browner on the scutellum. Beneath testaceous. Tegmina subhyaline testaceous, veins mostly concolorous (except the darker marginal), feebly granulate, apex of subcostal cell and adjacent apical cells, interoapical (rounded) angle, etc., smoky.

Length 4½-5 mill.

Hab. Queensland, Cairns (July), Kuranda (Aug.)

Dysthcatias gen. nov.

Allied to *Leptochlamys* but the vertex is only slightly transverse and extends beyond the eyes anteriorly; there is only one cross keel between vertex and frons. Vertex truncate behind, the pronotum almost rectangularly emarginate, nearly touching base of vertex. Frons apically angularly emarginate, 3rd ocellus absent. Tegminal veins strongly granulate, the granules piliferous.

1. *beecheyi* sp. nov.

Pale testaceous; face (and scutellum except the keels and the apical fourth) irregularly suffused with pale purplish-brown, and four lateral spots at union of frons and vertex. Posterior angle of scutellum whitish. Tegmina hyaline milky, veins whitish with pale hairs, the cross-veins on apical half suffusedly fuscous; tegmina strongly and prominently granulate with dark

fuscous, an oblique dark fuscous band on apical half and several short irregular markings; apical veins subsuffused. Legs pale, with brown annulations.

Female: abdomen short, tegmina extending about as far beyond the abdomen as the length of the hopper.

Var. *fuscata,* nov.

Like the type, but scutellum not suffused with fuscous; tegmina much darker and suffused all over with fuscous.

Length 5½ mill.

Hab. Viti Levu, Rewa (Mar., Muir).

Named after Captain William Beechey who voyaged in the Pacific in the "Blossom."

Australoma gen. nov.

Somewhat like *Kinnara* (which is a Cixiine, not an Achilid), but there is no third ocellus, the pronotum is more deeply emarginate, and the scutellum, much longer; the venation different, etc. Vertex nearly square, margins elevated, disk greatly depressed, basal margin slightly emarginate. Frons shaped much as in *Kinnara*, but a little wider basally. Tegmina vertical. Hind tibiae spineless.

1. *australa* sp. nov.

Pl. VIII, figs. 16-18.

Testaceous, tinged with ferruginous, paler beneath. Ocelli ruby-red. Tegmina hyaline, veins pale with brown granules, a few dark marks near the edge of the tegmen, as shown in the figure.

Length 5 mill.

Hab. Queensland, Kuranda (Aug.)

Quirosia gen. nov.

Allied to *Australoma* but the vertex is much smaller and narrower, anteriorly is angular, and has two small pit-like depressions anteriorly, base truncate. Frons as in *Dysthcatias.* Tegminal venation not importantly different from that of *Australoma.*

Named in honor of P. F. de Quiros, voyager in the Pacific.

1. *viticusis* sp. nov.

Sordid testaceous. Tegmina hyaline, tinged with sordid yellowish, veins and stigma paler, granules on anal vein dark. Wings hyaline, veins fuscous.

Length 5 mill.

Hab. Viti Levu, Rewa (Mar., M.).

Nesochlamys gen. nov.

Differs from *Gelastocephalus* by the quite different head and by the not so strongly compressed tegmina. Frons acutely carinate medianly.

1. *vitiensis* sp. nov.

Fuscous, the head keels yellowish. Clypeus, labium and legs whitish. Pronotum and scutellum dark fuscous, the hind angle of the latter minutely white. Clavus yellowish-brown, the apex fuscous, rest of tegmen dark fuscous or blackish except a semi-circular spot near the apex, from the subcostal margin to the middle of the tegmen. Abdomen mostly dark fuscous.

Length $3\frac{3}{4}$-$4\frac{1}{2}$ mill.

Hab. Viti Levu, Rewa (Mar. Apr. Nov., M.), Navua (Feb., M.).

The following have also been described from Australia:

Brixia migratoria Distant 1907 A. M. N. H., (7) XIX, 279, Queensland.

Cixius merula Distant, op. cit., 284. Queensland.

Achilini.

As stated elsewhere, I regard *Kimara* as a Cixiine; *Vekunta* is certainly an Issine and has nothing to do with Achilini.

Mr. Muir has collected 2 genera and 8 species in Fiji.

The following table will separate the Australo-Fijian genera:

1 Pronotum produced apically as far as the apical margin of the eyes; subcostal cell dilated; length 11 mill..14 *Ancipo*

1a Pronotum not produced apically nearly as far as the apical margin of the eyes; subcostal cell not dilated; length not over 7 mill.....(2)

2 Frons strongly impressed transversely; not (or very obsolescently) carinate; an opaque white band on the face.... ..... 13 *Aristyllis*

2a Frons not transversely impressed; more or less strongly carinate medianly .....(3)

3 Lateral keels of frons meeting at its base and forming an angle there. .....(4)

3a Lateral keels of frons not meeting directly at its base, which is more or less widely truncate (or slightly produced laterally ..... (5)

4 Vertex not longer than the eyes; genae foliaceous; eyes not nearly touching the lateral margins.....12 *Majella*

4a Vertex longer than the eyes, genae not foliaceous; eyes practically touching lateral margins.....11 *Callichlamys*

5 Vertex longitudinally impressed, with a further circular impression in the middle.....10 *Francesca*

5a Vertex often longitudinally impressed (entirely, or between the keels) but not further impressed circularly.....(6)

6 Two opaque white bands across the face.....(7)

6a Face not banded.....(8)

7 Vertex not carinate medianly, very transverse, apical margin not nearly touching apical margin of head dorsally and not connected therewith by keels.....9 *Pyrrhyllis*

7a Vertex carinate medianly, not transvere, apex touching the apical margin of the head dorsally.....8 *Benella*

8 Vertex transverse. .....7 *Achilus*

8a Vertex not transverse.....(9)

9 3 to 4 middle apical cells of tegmina distinctly longer than wide. ..... (10)

9a 3 to 4 middle apical cells of tegmina not (or scarcely) longer than wide .....6 *Salemina*

10 Frons basally slightly angularly produced laterally..... ..... 5 *Argelensa*

10a Frons basally truncate (or if very slightly produced angulately at the sides, then also similarly in the middle)..(11)

11 Vertex very lightly impressed longitudinally on each side of the middle keel, which is strong.....(12)

11a Vertex deeply impressed longitudinally, not (or feebly) keeled. .....4 *Callinesia*

12 Lateral keels of vertex anterolaterally obtuse angled..... ..... 3 *Eurynomeus*

12a Lateral keels of vertex meeting anteriorly acutely or roundly-acutely. ..... (13)

13 Apical cells of tegmina distinctly declivous, tegminal veins granulate. .....2 *Cythna*

13a Apical cells not (or very slightly) declivous, tegminal veins not granulate. .....1 *Phenelia*

Phenelia.

Mr. Muir has collected two species which I place provisionally here. *Phenelia* seems to form two subgenera:

1 Vertical keels very strong, intracarinal areas very narrow; lateral keels of vertex meeting acutely.....
.....(a) *Phenelia* sens. str., type *clidipteroides*

1a Vertical keels feebler, intracarinal areas wide; lateral keels meeting roundly-acutely anteriorly. (b) *Nephelia*, type *bicuneata*.

The two species of *Nephelia*, are easily separable by the colour:

1 Tegminal veins pallid.....2 *bicuneata*

1a Tegminal veins blackish.....3 *tristis*

2. *bicuneata* sp. nov.

Male. Brownish-yellow, abdomen and body beneath paler. Tegmina yellowish hyaline with 2 subopaque yellowish wedges, very narrowly bordered with fuscous, near the apex of the subcostal cell and a blackish-brown speck in the second apical cell; veins pale except the stem and inner fork of the radial vein, the claval veins, &c., which are yellowish-brown. Vertex about $2\frac{1}{2}$ times as long as the pronotum, produced before the eyes.

Length $3\frac{7}{8}$ mill.

Hab. Viti Levu, Rewa (Mar., M.).

3. *tristis*, sp. nov.

Male: form of the last, but the vertex shorter, scarcely produced in front of the eyes. Pitchy, paler below. Tegmina dark smoky, with 2 black-bordered white wedges near the apex of the subcostal cell.

Length $3\frac{1}{8}$ mill.

Hab. Viti Levu, Rewa (Apr., M.).

Eurynomeus.

This may possibly be the genus *Tangina*, but the frons is laterally sinuate and the radial vein is forked apically. I am inclined to think Melichar's figures faulty.

1. *australiae.*

Pl. IX, figs. 7-8.

Callinesia gen. nov.

This genus is very close to *Phenelia* and *Eurynomeus,* but is distinguished by the structure of the vertex as stated in the analytical table of the Achiline genera. A black spot always present on the mesopleura. Type *pulchra.* The four species—all from Fiji—are separable thus:

1 Clavus and corium bright red striped with yellow..1 *pulchra*
1a No bright red stripes on the tegmen.....(2)
2 Clavus and corium yellowish with pale brownish stripes; clypeus pale.....(3)
2a Clavus and corium greenish yellow with silver-grey or brownish stripes; clypeus black .....2 *ornata*
3 Clavus and corium yellow with broad pale fawn bands..... .....3 *venusta*
3a Clavus and corium yellowish with narrow orange brown lines ..... 4 *pusilla*

1. *pulchra* sp. nov.

Pl. IX, fig. 17.

Yellow, legs and beneath paler; junction of vertex and frons with a black horseshoe, a black dot on the vertex laterally. Eyes black. Pronotum with a sanguineous spot anteriorly. Scutellum with an angulate sanguineous stripe which passes over on to the base of the tegmina, which are sanguineous with the following bright yellow marks: a broad basal stripe, running from the middle of the basal margin to the subcostal margin; an elongate straight spot from commissure (at posterior angle of scutellum) half way across the tegmen; an oblique entire median stripe runing subparallel to the basal margin, and 3 lateral or sublateral spots apical of that, the apical one at least being margined interiorly with fuscous. Apical and subapical cells hyaline (some of the outer ones suffsued sanguineously) with sanguineous veins. Vertex deeply impressed, middle keel obsolescent. Labium reaching to middle coxae.

Length 4½ mill.

Hab. Viti Levu, Rewa (Mar.-Apr.).

2. *ornata* sp. nov.

Fulvescent or yellowish testaceous, the head marked as in *C. pulchra.* Eyes and clypeus black. Posterior two-thirds of scu-

tellum intracarinally black (or silvery grey.) Tegmina fulvescent or yellowish, with fulvous veins, an oblque silvery grey (or brownish) oblique band near the base and a large spot of the same colour near the middle exteriorly. Apical cells smoky silvery. Wings parly smoky, partly margined very narrowly with canguineous, veins smoky. Sternites black, pleurites margined with sanguineous. Head as in *C. pulchra.*

Length $4\frac{1}{2}$-$4\frac{7}{8}$ mill.

Hab. Viti Levu, Rewa (Mar.-Apr., Muir).

3. *venusta* sp. nov.

Ivory coloured, vertex with a tiny black streak on each side of the middle keel anteriorly and a black speck on the gena close to the eye. Eyes reddish or pinkish. Pronotum with one and scutellum with 3, orange brown spots on each side of the middle keel. Tegmina with two more or less well formed pale fawn transverse bands and one or two lines; one or two blackish lines on and beyond the subcostal cell apically. Wings hyaline, veins blood-red. Vertex a little less deeply impressed than in the preceding, middle keel clearer.

Length 4-$4\frac{1}{2}$ mill.

Hab. Viti Levu, Rewa (Mar., Muir).

4. *pusilla* sp. nov.

Orange testaceous, paler beneath; vertex with a black V anteriorly, and 3 black specks on the gena. Eyes red. Pronotum with an orange-brown spot on each side; scutellum with 2 interrupted narrow transverse orange-brown lines. Basal half of tegmen pale yellow with a transverse hyaline band and about five undulating orange-brown transverse lines. Apical half of tegmen smoky hyaline, veins whitish, some a little tinged with blood-red. Subcostal cell basally yellow, apically hyaline with 2 yellow wedges, basally bordered with black very narrowly. Wings hyaline, veins very pale sanguineous. Head as in *C. pulchra.*

Length 4 mill.

Hab. Viti Levu, Rewa (Mar., Muir).

Francesca.

Francesca saleminophila is now figured. (Pl. VII, figs. 18-19.)

Callichlamys gen. nov.

Apparently allied to *Cnidus* by the elongate-oval eyes; has somewhat the appearance of *Pseudohelicoptera*.

Vertex narrowing gently towards the rounded apex, flattened along the entire length and medianly carniate. Eyes elongate oval, not as long as the vertex and decumbent on the pronotum Frons sinuate laterally, medianly carinate; clypeus small, labium reaching to about the base of the middle coxae. Pronotum anteriorly subtruncate, posteriorly angularly emarginate. Pronotum and scutellum tricarinate. The radial vein forks a trifle nearer to the base than the brachial; subapical cells present; apical cells elongate. Hind femora with a small spine.

There are two species:

1 Vertex more than twice as long as an eye.....1 *muiri.*
1a Vertex scarcely longer than an eye.....2 *undulata*

1. *muiri* sp, nov.

Pl. IX, fig. 20.

Sordid whitish, vertex with 2 subcontiguous dark fuscous lines on the apical half, clypeus fuscate. Pronotum and scutellum rosily suffused discally. Tegmina hyaline, tinged with yellow, suffused with sanguineous especially on the subcostal and radical cells and clavus, also on the apical half of the apical cells; veins sanguineous; the nodal veins fuscous, the basal one bordered with yellow and a dark fuscous spot at the base of the second apical cell.

Length $4\frac{3}{4}$-$5\frac{1}{2}$ mill.

Hab. Viti Levu, Rewa (Mar.-Apr., Muir's No. 204).

2. *undulata* sp. nov.

Male: head, pronotum and scutellum pale yellow; 2 subcontiguous blackish elongate narrow spots (sometimes merging) close to apex of vertex; clypeus brownish; 2 brown spots on pronotum; 4 brown spots (2 in a row each side of middle line) on scutellum between lateral keels, scutellum laterally brownish. Tegmina whitish, very narrowly margined at least apically with dark sanguineous, with about 4 oblique, partly a little obscure, interrupted, brown rows of stripes; subcostal cell with 2 yellow wedges near the apex, margined with brown. Apical cells

smoky, veins partly pale. Legs mostly yellowish-white. Sternites black.

Length 4 mill.

Hab. Viti Levu, Rewa (Mar., M.).

Aristyllis.

The following species are now figured:

A. aristyllis, Pl. IX, figs. 3-4.

A. omphale, Pl. IX, figs. 1-2.

A. adippe, Pl. IX, figs. 5-6 (the type is a little immature, consequently the frontal structure is a little obscure.

Ancipo.

Ancipo Kirkaldy.

=*Tudca* Distant op. c., 290.

1. *diva.*

A. diva Kirkaldy.

=*T. picturata* Distant, l. c.

The following have been described as Achilinae:

Mahuna conspersa Distant 1907, op. c., 290 Queensland.

Ouvea doddi Dist., op. c., 292, do.

Talaloa pallescens Dist., op. c., 295, do.

Dictyophorini.

Distant has recently described the following:

Dictyophara (sic!) *prognatha* 1906 A. M. N. H. (7) XVIII, 352, Queensland. He also (probably incorrectly) confirms a species of Walker's in the same genus, viz:

D. concolor Walker 1851 List 322; Distant l. c., North Australia, Queensland and South Australia.

Distant, following Stal, incorrectly places *Lausaba* in the Tropiduchinae; the absence of a well developed costal vein, however, and the running of the anal vein into the commissure just basal of the apex of the clavus, places this genus in the Dictyophorinae. The genus *Augila* placed by Stal and Distant in the Issinae, certainly has no place there; it probably belongs to the Dictyophorinae.

In the A. M. N. H. (7), XIX, 415, Distant boldly synonymizes *Thanatodictya lucindae* Kirk. with *Dictyophora bifasciata* Dist., and

T. anadyomene Kirk. with *D. insignis* Dist., but he rather unfairly omits to mention that the likelihood of these synonyms was indicated by me at the same time. I thing the latter pair are likely to be united, though they could not be from Distant's description. In the case of the former, *D. bifasciata* is said to have ochraceous sternites, while in *T. lucindae*, they are almost black, in both sexes and in a good series. For the present, therefore, I decline to accept Distant's synonym. In any case, the reference of these forms to the genus *Dictyophora* (or *Dictyophara* as Distant incorrectly cites it) is absurd.

Fulgorinae.

Eurystheus perkinsi.

This species was taken on a species of *Casuarina*.

Eurinopsyche.

I unfortunately said (p. 389) that the tegmina are decumbent; on the contrary they are scarcely tectiform, it is the tegmina in *Eurystheus* that are subdecumbent. *E. obscurata* was taken from "Queensland native plum."

Three new species have since been described from Australia by Distant, who has indeed included them in *Eurystheus*, but as he compares them with *E. dilatata*, it is to be presumed they belong to *Eurinopsyche*.

2. *doddi* Distant 1903 A. M. N. H. (7) XVIII, 19 (Queensland.)
3. *clementi* l. c. (West Australia.)
4. *pallescens* op. c., 20 (West Australia.)

Distant has also (26-9) described from Australia two supposedly new genera with three species, viz:

1. *Galela parva* (West Australia.)
2. *G. abdominalis* (Colony not stated.)
3. *Erilla turneri* (Queensland.)

N. B. *Desudaba maculata* and the other species in Distant's paper cited (390 etc.), were published 1893 (Jan.), not 1892 (Dec.).

On Pl. VII, figs. 7-8, a nymph of a Fulgorine is figured. The adult is unknown. In fig. 8 the sublateral keels are shown a little too strongly and the anterior sensory organs have been omitted.

Asiracidae.

The most obvious character of this family is the *mobile* spur at the base of the hind tibiae. Its most primitive form is probably seen in *Ugyops, Asiraca,* &c., in which it is awlshaped, the margins not serrate or dentate. There are two further types, as mentioned further on.

The Asiracidae probably—almost certainly—are derived from Cixiinae, but the mobile spur and the nature of the antennal sensory organs necessitate the maintenance of a special family for them.

Head.

In all known Asiracid nymphs, the frons has two keels down the middle, and the entire head is studded with sensory pustules. In the adult *Achorotile*, both these characters obtain, and this genus is therefore reasonably considered to be the most primitive known Asiracid. The first step of importance in the development of the family is in the fusion, almost wholly or in part, of the median keels of the frons; in some forms, they are completely fused almost to the connecting keels, in others, only as far back as the apical margin of the eyes. *Laccocara* has the nymphal pustules, but has partially fused frontal keels. These are the only two Asiracid genera known to me which have punctured pustules in the adults. Of other head characters, the most obvious is the form of the antennae; in the majority of forms, the first segment is short and cylindrical or annuliform, the segment being subcylindrical and not, or not noticeably, furished with sensory organs; in others they are varyingly flattened and dilated, elongate, and so forth.

The clypeus is sometimes carinate, sometimes not. The genal keel sometimes meets the frontal keel acutely at the apical margin, sometimes does not meet it. In one form, *Paranda*, the vertex is smoothly rounded in front, not (or feebly) carinate, and this must perhaps be regarded as a more or less degraded form.

Thorax.

Great stress has been placed on the lateral keels of the pronotum, two categories being supposed, viz.:

1. Lateral keels straight, meeting the hind margin,
2. Lateral keels curved, not meeting the hind margin.

Very often however the keels fork *near* the hind margin, one fork reaching the hind margin while the other curves outwards. The scutellum of the mesonotum may be 1, 3, 4 or 5 keeled; this is useful for generic separation.

Venation.

The venation is of comparatively little importance, as it is often very variable, especially in the apical cells. The brachial and radial are nearly always forked near the subapical line. The median vein continues direct to the apical margin of the tegmen in *Asiraca, Conomelus, Criomorphus, Tropidocephala* and *Metropis,* but ends at the subapical line in *Jassidaeus, Delphacodes* and its allies. The wings have (generally in the long-winged forms at least) a small stridulatory area. (See "Introduction.")

Legs.

The legs afford good characters.

In *Asiraca,* and *Phyllodinus,* the fore pair are dilated, in other genera, however, they are cylindric.

A good character is afforded by the mobile spur of the hind tibiae, which has not up to the present been fully utilized. There are three principal forms:

(1) probably the original, in which it is simple, awl-shaped, not provided with a fringe of teeth, but only one apical tooth. This occurs in *Asiraca, Melanesia and Ugyops.*

(2) the usual form; large, bilaminate, with a row of many, very feeble, minute teeth; the species are probable grass-feeders.

(3) solid, subcultrate, elongate, narrow and strongly compressed, with a row of a few, large, strong teeth. This form is that of all the endemic Hawaiian species, but otherwise only known to me in *Proterosydne,* an Australian genus.

As the Hawaiian forms are all arboreal, this may be the characteristic spur of arboreal species.

Genitalia.

The genitalia in the male are the final test of a species and even afford generic criteria.

(a) Male genital segments.

The terminal segment in the male is in the form of a chitinous cylinder, whose profile often affords good specific characters; this is the pygophor. On looking at this from behind, it is seen to be divided into two parts, a smaller dorsal cavity, the anal tube; and a larger ventral one, the genital tube.

The anal tube contains the mobile anal style,* while the genital tube contains the following:

(1) the mobile genital styles which are articulated near the ventral margin, being situated more or less horizontally on looking into the tube.

(2) the oedeagus, which is situated about the middle of the pygophor and is more or less vertical on looking into the tube, so that the pygophor must be tilted to observe the former properly. It is perforated by the muscular, protrusible, penis;

(3) the lateral margins of the pygophor are often thickened and dilated and also interiorly produced into hooks or spines. There are also hooks or spines close to, or proceeding from, the wall between the anal tube and the genital tube, and also on the posterior margin of the pygophor.

The following is a partial synonymy of the parts:

1 Pygophor=Pygofer Edwards=*Aftertraeger* Fieber=*Vulvar appendix* Signoret=*Hypopygium* Kolenati.

2 Anal Tube=*Anterior part of the segment* Sharp=*Afterrohr* Melichar..

3 Anal Style=*Rectal cauda* Sharp=*Afterstielchen* Fieber. This is the termination of the alimentary canal.

4 Diaphragm=*The transverse deflected wall separating the anal tube from the genital tube* (Sharp).

5 Oedeagus=*Porte penis* Fieber=*Penistrager* Melichar. This is the "part of the male organs through which pass the membranous structures connected with the ejaculatory duct."

6 Genital Styles=*Lateral accessory pieces* Sharp=*Styli* and *Griffel* Fieber=*Cerci* of some authors.

7 Ventral Margin of Pygophor=*Posterior edge of segment*=*Lip* Sharp.

The various hooks are not specially named.

* This has sometimes been omitted in the drawings.

In almost all the species hereafter described, the male pygophor is briefly described, but the figures should also be referred to. In connection with both descriptions and figures, it must be remembered that the pygophor is not always, or even often, straightly truncate apically, that the different pieces do not necessarily lie in the same plane, and, moreover, that they are partly mobile. Consequently when comparing with suspected specimens, the latter should be carefully examined from several points of view. The figures have almost all been drawn when the genital styles, usually the most important part, are as flat to the eye, as possible.

(b) Female Genitalia.

I have not specially studied these, and have not used them in the descriptions, but they appear to present slight specific differences in the lengths of the segments.

The Australo-Fijian Genera may be disposed as follows:-

1 Tibial spur awl-shaped, with concave sides, and one (apical) spine ..... (2)

1a Tibial spur bilaminate, or at least tectiform, with several feeble spines on the lower edge ..... (3)

1b Tibial spur subcultrate, solid, elongate, strongly compressed with 8 strong spines..... 3 *Proterosydne*

2 Antennae very long, second segment one half longer than the first, frontal keels uniting about the middle of the frons ..... 1 *Ugyops*

2a Antennae shorter, with the second segment 3 times longer than the first, frontal keels uniting close to the base of the frons ..... 2 *Melanesia*

3 Antennae cylindric; male pygophor not spined on the ventral margin ..... (4)

3a First segment of antennae flattened and much widened apically; male pygophor with 2 spines on the ventral margin ..... 7 *Perkinsiella*

4 Frons with 2 outwardly rounded keels, uniting at base and apex (if at all)..... 4 *Criomorphus*

4a Frons with 2 keels uniting not apical of the lower margin of the eyes ..... (5)

5 Head dorsally at least twice as long as wide..... (6)

5a Head dorsally less than twice as long as wide..... (8)

6 Hind margin of head sinuate ..... 8 *Stenocranus*

6a Hind margin of head truncate ..... (7)

7 No connecting (transverse or oblique) keels on vertex.... ..... 10 *Tropidocephala*

7a Transverse or oblique submedian keels on the vertex.... ..... 9 *Hadeodelphax*

8 Frontal keels uniting apical of one-fourth of the length of the eyes frontally .....(9)

8a Frontal keels uniting not apical of that.....(11)

9 Head rounded anteriorly, keels on frons very feeble.... ..... 11 *Anectopia*

9a Head with strong keels .....(10)

10 Lateral keels of pronotum straight, or curving very slightly inwards, reaching the posterior-margin; male pygophor without spines on the ventral wall of the anal tube.... ..... 5 *Peregrinus*

10a Lateral keels curving outwards under the eyes; male pygophor with spines on the ventral wall of the anal tube ..... 6 *Dicranotropis*

11 Lateral margin of vertex roundly arched, not carinate, meeting anteriorly roundedly, the central dorsal area long triangular, strongly keeled .....12 *Haplodelphax*

11a Lateral margins of vertex more or less straight and keeled ..... (12)

12 Male pygophor with the ventral margin deeply emarginate 3 or 4 times.....15 *Megamelus*

12a Male pygophor not emarginate on the ventral margin more than once .....13 *Gelastodelphax*, 14 *Smicrotatodelphax* and 16 *Delphacodes*

Ugyops.

Ugyops Guerin 1834 Voy. Belanger Zool. IV 477.

This genus is distributed over the Oriental Region and one species was described from Ponape in the Carolines; a new species is now added from Fiji.

1. *viticnsis*, sp. nov.

Pale sordid stramineous, suffused in places with a rosy hue, apical half of second segment of antennae infuscate. Keels of head and scutellum very narrowly dark. Pronotum discally fuscous. Tegmina hyaline, tinged with a smoky hue in parts, subcostal vein pale, other veins dark fuscous, occasionally annulate with yellowish white; apical cells sparsely fuscous in parts,

especially apically; claval veins irregularly suffused. Wing hyaline, veins blackish brown, apical margin fuscate. Tergites marked with fuscous. Vertex deeply emarginate, the truncate base being apical of the middle of the eyes (dorsally). Frons much as in Stal's figure of *U. kinbergi,* but the central keels are not so prominent basally and are less distant; the lateral margins are more evenly rounded towards the clypeus which is clearly sutured off from the frons. Second segment of antennae one-half longer than the first. Labium long, reaching to about the hind coxae. Tibial spur awl-shaped with 3 hollow sides, only one (an apical) spine.

Female: pygophor pale yellowish; ovipositor apically fuscous, about as long as the nota and the rest of the abdomen.

Length 9¾ mill.

Hab. Viti Levu (No. 133 Muir Mar. '06) arboreal.

Melanesia, gen. nov.

Head dorsally a little longer than wide, vertex transverse, irregularly shaped, with two fairly deep but obscurely defined foveae; frons about twice and a half as long as wide, apically and basally truncate, a single filiform keel forking close to the base, lateral margins widening a little towards the apex but narrowing slightly at the apical margin. Genae not carinate. Labium reaching beyond the fore coxae. Antennae long and reaching to about the middle of the clypeus, somewhat flattened, with few circular sensory organs, but many short bristles; second segment three times as long as the first; which is rather wider apically than basally. Pronotum very transverse, lateral keels curving under the eyes. Scutellum four times as long as the pronotum, with 5 keels. Tegmina with the radial vein forking much closer to the base than the brachial, reforked basal of the subapical transverse line; somewhat apical of the middle, the tegmina are bent in and there is a cross vein which cuts across the longitudinal ones, turning off obliquely towards the apex about the middle and turning off again, close to the apex of the clavus, into the commissure. Tegmina closely and finely granulated both on and between the shortly piliferous veins; there are 10 apical veins, 4th and 5th reforking, 7, 8, and 9 having a common base. Hind tibiae longer than the tarsi, with a basal spine and another basal of the middle; spur much as in *Ugyops;* basal segment of hind tarsi much longer than the other two together.

1. *pacifica*, sp. nov.

Pl. XVII, figs. 13-14.

Vertex, pronotum and scutellum yellowish fuscous, keels a little darker; face yellowish, lateral keels very narrowly blackish-brown; antennae, labium legs, sterna, &c., brownish-yellow, the fore and middle tibiae obscurely biannulate with fuscous; apices of first and second segments of hind tarsi, more or less dark. Tegmina brownish-yellow, a small dark spot about the middle of the clavus; apical margin dark and often the subcostal also.

Male: sternites more or less ferruginous; last segment deeply rotundately emarginate; pygophor elongate, very sinuate in profile; anal tube elongately produced in a horizontal direction. Genital styles contiguous inwardly for a third of their length, then curving outwards and recurving, apices acute, nearly contiguous. The entire male pygophor is very peculiar and very difficult to describe, but the figures show clearly the salient characters.

Female: sternites yellowish-brown, sutured with black, few last segments deeply acute-angularly emarginate, ovipositor dark, much longer than pygophor.

Var. *strigata* nov.

Female: a broad blackish-brown stripe down the tegmen from base to apex, slightly outside the middle.

Length 6¼-6½ mill.

Hab. Fiji (March, Muir's Nos. 111, 114 and 145), Navua (Feb. M), Rewa (March M), arboreal.

Purohita Distant.

1906 Faun. Ind., Rh. III, 465 & 470.

This genus must be placed in the neighborhood of *Asiraca* on account of the structure of the antennae and tibial spur, though the latter shows some alliance with *Perkinsiella* &c. The hopper has a close superficial resemblance to *Oliarus*.

1. *arundinacea* Distant.

1907 E. M. M., XLIII, 10.

I am obliged to Messrs. Mann and Antrim for specimens of this pretty little hopper. Beyond the greater length of the sec-

ond segment of the antennae, it differs from *P. cervina* by the radial and brachial veins of the tegmen being forked at about the same distance from its base, while in *P. cervina* the radial is forked much nearer the base. I still further supplement Distant's superficial descriptions by figures of the male genitalia; male pygophor of irregular shape, very deeply and elongately emarginate ventrally; the anal tube forms a kind of hood, covering over the genital styes, which are acutely elongate. (Pl. XV, figs. 6-8).

Proterosydyne, gen. nov.

Distinguished by the absence of connecting keels on the vertex, the very large eyes, and the peculiar tibial spur.

Vertex subtriangular (the anterior and posterior halves of the lateral margins very obtuse angled, so that, although the vertex is really 5-hedral, it may be said to be triangular), with no median or connecting keels; lateral keels not quite contiguous apically, almost enclosing an elongate exceedingly narrow space before uniting about the apical margin (frontally) of the eyes. Between the apex of the vertex and this forking, the head is highly polished and the keels rather obscure, otherwise the keels are all well marked. The median keel reaches the apical margin of the frons, which is a little emarginate roundedly. Vertex deeply concave, about as long as wide and does not extend as far anteriorly as the yes, thus displaying a rounded frontal margin. Frons rather narrow, elongate, subparallelsided, slightly rounded exteriorly. Middle keel of genae meets lateral margins of frons at an acute angle at the apical margin of the frons; clypeus rather feebly tricarinate. Head not decumbent on the pronotum anterolaterally. Eyes very large, about as wide as vertex, longer than wide. Antennae subcylindric, long, reaching almost to apex of clypeus, second segment scarcely more than twice as long as the first, a little wider apically than basally, flagellum much longer than peduncle. Pronotum longer than vertex, narrower apically than the vertex basally, strongly tricarinate, lateral keels straight, reaching posterior margin, not contiguous anteriorly; posterior margin slightly, obtuse-angularly, emarginate posteriorly. Scutellum with anterior three-fourths of disk roundly convex and polished, posterior fourth flat, rather obscurely tricarinate, middle keel not reaching the flat part. Tegmina (brachypterous form only known) granulate, reaching be-

yond apical margin of last pleurite. Wings rudimentary, reaching very little beyond base of metanotum. Hind tibiae with 2 spines (1 basal), nearly one-half longer than tarsi; spur solid, elongate, narrow, with 8 spines. First segment of hind tarsi longer than the others together.

1. *arborea* sp. nov.

Pl. XVIII, figs. 11-12.

Basal part of vertex, the clypeus, pronotum, scutellum anterolaterally and basally, metanotum, sterna, legs, etc., pale yellow-brown. Apical part of vertex, basal two-thirds of frons, a large round spot on disk of scutellum, polished black. Antennae pale brown, second segment more or less infuscate. Apical third of frons whitish. Tegmina hyaline, basal half tinged with yellowish-brown, a large hyaline spot in the middle (with a short, dark, transverse stripe at base), which, when the tegmina are closed, discloses the tiny, opaque white wings. Tergites blackish, basally reddish testaceous, apically with a pale yellow-brown, elongate wedge; apical margin of last three tergites sanguineous.

Female: sternites pale brown, ovipositor blackish. Last tergite longer than the proceeding segment, apically roundly produced.

Length 2½ mill.

Hab. Queensland, (Koebele 2302).

Only a single female, unfortunately, of this very distinct form.

Criomorphus.

Criomorphus Curtis 1833 Ent. Mag I, 195.

Stiroma Fieber 1866 Verh. Zool. bot. Ges. Wien XVI (?=subgen.)

Ditropis Kirschbaum 1868 Jahrb. Nass. Ver. Nat. XXI-XXII. p. 11.

Eurybregma Scott 1875 E. M. M. XII, 92.

A somewhat heterogeneous assemblage, some of the forms of which seem not far from being directly in the line of descent of *Dicranotropis*. The pygophor is destitute of spines or hooks on the ventral margin.

1. *australiae* sp. nov.

Differs from most of the other species included in *Criomorphus* by the frontal keels being separated, though close together,

during their entire length; the antennae reach beyond the base of the clypeus. Dark fuscous or pitchy, frons and legs a little paler, the former with 5 or 6 tiny paler spots on each side; clypeal keels and lateral keels of frons, antennae, markings on legs, &c., brownish testaceous. Tegmina hyaline.

Male: pygophor pitchy.

Length $3\frac{1}{3}$ mill.

Hab. Queensland, Brisbane (Nov., P.).

Peregrinus.

Peregrinus Kirkaldy 1904 Entom. XXXVII, 175 and 1906 Bull. H. S. P. A. Ent. I, 407.

=*Pundaluoya* (pt.) Distant 1906 F. B. I, III, 467.

This genus agrees with *Dicranotropis* in the forking of the front, in the antennae, in the non-contiguity of the frontal and genal keels apically, in the ocelli not nearly touching the lateral keel of the frons, but being situated close to or touching the eyes, and in the form of the tibial spur. It differs chiefly in the tegminal and alar venation in the macropterous forms, and in the lateral keels of the pronotum which practically reach the hind margin and curve inwards here rather than outwards. The second and third apical veins have a common stalk, the latter being re-forked. The pygophor has no spines or hooks on the ventral margin in the males, nor on the ventral wall of the anal tube.

1. *maidis.*

Pl. XII, figs. 7-8 & Pl. X, f. 14.

This has further been recorded from the Antilles by Ballou, from Ceylon (under the names of *Liburnia psylloides* and *Pundaluoya simplicia*) by Distant, and Mr. Muir has taken it from grass in Fiji, Rewa (Mar.-Apr.-Nov., No. 6). Mr. Van Deventer has sent it to me from Java.

Dicranotropis.

In the males, the ventral margin of the pygophor is without hooks, but there are some on the ventral wall of the anal tube.

The 5 Australasio-Oriental species known to me may be disposed as follows:

(a) Longwinged forms:

1 Tegmina maculate .....(2)
1a Tegmina practically immaculate .....(3)
2 Tegmina strongly granulate, apically with a semicircular stripe and 2 short, straight stripes .....3 *koebelei*
2a Tegmina feebly granulate, apically with a straight stripe.. ..... 4 *muiri*
3 Apical veins dark, slightly infuscate .....1 *anderida*
3a Apical veins pale .....2 *aristoxenus*

(b) Shortwinged forms.

1 Tegminal veins pale, not granulate .....1 *anderida*
1a Tegminal veins with large, dark granules .....(2)
2 Frons apparently concolorously fuscotestaceous, fore tibiae black .....(?) 5 *nigropunctatus*
a Frons blackish brown with pale yellowish specks; fore tibiae brownish black, pallidly annulate .....3 *koebelei*

Many of the European genera seem to be but little differentiated from *Criomorphus,* for ex., in the form of the frons, *Dicranotropis hamata* seems much nearer to *Delphacodes* than it does to *Dicranotropis beckeri.* (*)

anderida sp. nov.

Differs, beyond the points already mentioned, from any other *Dicranotropis,* by the head keels not being bordered at all with blackish, except *D. nigropunctata* Melichar, which has dark genae and dark lateral parts to the nota, &c. Orange brown, the keels of vertex and nota, and the parts exterior to the lateral keels of the nota mostly, pale yellowish testaceous. Frontal keels very narrowly bordered with pale yellowish orange, frontal specks the same colour. Antennae pale orange testaceous, apex of first segment dark fuscous. Tegmina pale yellowish hyaline, veins of basal two thirds mostly pale, of apical cells fuscous somewhat suffusedly. Frons elongate, narrower, subparallel, a little constricted basally, forked a little basal of the apical margin of the eyes. Tegminal veins very feebly granulate.

* I propose a new genus for this last species, viz.: *Leimonodite*, characterized by the frontal keels being separate till nearly the apical margin. From *Criomorphus* it differs by the longer and narrower frons, whose median keels are stalked apically. If this genus cannot be sustained, then *Delphacodes*, *Criomorphus*, *Dicranotropis* and several others, must be thrown together.

Shortwinged form: tegmina much as in *D. hamata*, the apical cells, or at least one of them, fuscous.

Female: abdomen more or less infuscate laterally.

Length 2½ (brachypterous), 4⅛ (macropterous) mill.

Hab. Queensland, Cairns (Aug., P.), Redlynch (July, P.), Brisbane (June, P.); Fiji, Rewa (Muir's No. 160, Mar.-Apr.), Ba (Jan., M.), Navua (Feb., M), on grass. I have seen females only.

2. *aristoxenus*, sp. nov.

Very close to the last, but a little smaller and coloured differently.

Pale yellowish testaceous, without orange colouration and the frons not (at least noticeably) maculate.

Tegmina pale yellow hyaline, veins uniformly pale testaceous, not granulate. Lateral margins of frons very slightly more rounded laterally and more constricted basally.

Length 3½ mill.

Hab. Queensland, Cairns (Aug., P.).

I have seen females, only, of this also.

3. *D. koebelei* (Kirkaldy).

Pl. VIII, figs. 9-10 & Pl. XVII, figs. 8-9.

Phacalastor koebelei Kirkaldy 1906 Bull. H. S. P. A. Ent. I, 408.

Since my original description, I have seen a shortwinged female.

Dark fuscous; keels, spots on frons, second segment of antennae, intermediate and hind legs more or less, &c., yellowish testaceous. Tegmina cinereous (granulations dark fuscous), reaching to about half the length of the abdomen, apically rounded. The male pygophor is subtrotundate viewed end-on, the ventral margin projecting acutely in profile.

Length 2⅔ mill.

Hab. Fiji (March, K.).

4. *muiri* sp. nov.

Pl. XII, figs. 4-6.

Pale cinereo-testaceous, metanotum posteriorly yellow. Sternites blackish, laterally variegated with yellowish-brown, medianly sub-

sanguineous. Genital segments pale. Tegmina hyaline, veins whitish; second longitudinal apical cell smoky, apices of apical veins infuscate, also a short fuscous line near apex of commissure. Keels of frons forked about the middle of the eyes.

Male: pygophor beneath very deeply emarginate basally. Anal tube with a strong spine on each side overlooking the genital tube. Genital style elongate reaching from end to end. The oedeagus is remarkably long and is subhorizontal.

Length 4½ mill.

Hab. China, Wei Chou (Sept.).

I have great pleasure in naming this species after its discoverer.

Perkinsiella.

Perkinsiella Kirkaldy 1903 Entom. XXXVI, 179 and 1906 Bull. H. S. P. A. Ent. I, 404.

Phacalastor Kirkaldy op. c., 408. (part)

A derivative of *Dicranotropis* from which (& *Peregrinus*) it differs by the antennae being flattened and dilated, the apical margin of the first segment being much broader than the base; the genal and frontal keels meet acutely apically. The venation, and the form of the head and pronotum are similar to those of *Dicranotropis*. In the male the ventral margin of the pygophor has two hooks or spines of varying length and form, according to the species. The males of the six species known to me are easily distinguishable by the form of the pygophor, otherwise the species may be separated as follows: (*)

1 Frons with a more or less uniform ground colour, with transverse pale dots, &c. ..... (2)

1a Frons basally brownish, apically whitish, the two areas well contrasted, the former with pale dots ..... (3)

2 Frons pale brownish, with whitish dots basally and apically ..... 5 *vastatrix*

2a Frons piceous with brownish-yellow transverse dots, &c. ..... 1 *pseudomaidis*

3 Males ..... (4)

3a Females ..... (7)

* *Perkinsiella* is also closely related to the American *Stobaera*, but in the latter the head is distinctly narrower than the pronotum and the pygophor has no spines on the ventral margin in the male.

4 Scutellum laterally broadly dark brown .....(5)
4a Scutellum concolorous .....(6)
5 Tegmina feebly granulate .....3 *saccharicida*
5a Tegmina strongly granulate .....6 *sinensis*
6 Antennae shorter, granulation dark and stronger..... ..... 2 *graminicida*
6a Antennae longer, granulations paler and feebler..4 *vitiensis*
7 Longwinged forms ..... (8)
7a Shortwinged forms ..... (9)
8 Tegmina almost immaculate, some of the apical veins lightly suffusedly infuscate ..... 4 *vitiensis*
8a Median cell sometimes smoky, also 5th and 6th apical cells (except small hyaline spots at apex).....3 *saccharicida*
9 Antennae longer and stouter, tegminal granules comparatively feeble and paler .....3 *saccharicida*
9a Antennae shorter and less stout, tegminal granules stronger and darker .....2 *graminicida*

Table of known *nymphs* of the genus *Perkinsiella*.

1 Ground colour of frons darkish-brown with white marks; a dark brown stripe across the base of the tegminal and wing pads, apex of tegminal pad dark brown..... ..... 1 *pseudomaidis*
1a Frons dark basally with pale marks, pale apically; tegmina not striped transversely as above .....(2)
2 A conspicuous black spot at apex of abdomen on each side; tibial spur fuscous .....2 *graminicida*
2a No spot (or very inconspicuously) at apex of abdomen on each side; tibial spur pale ..... (3)
3 Base of 1st segment of hind tarsi brown; clypeus blackish-brown ..... 4 *vitiensis*
3a First segment of hind tarsi entirely pale; clypeus pale fuscous ..... 3 *saccharicida*

The *nymph* of *sinensis* is not yet known; that of *vastatrix* has been briefly described by Breddin, but not so as to be included in the table.

1. *pseudomaidis*.

Pl. XII, figs. 1-3.

Phacalastor pseudomaidis Kirkaldy l. c.

This species tends to connect typical *Perkinsiella* with *Dicranotropis*, but still has the widened antennae. Mr. Muir has now

taken it in Fiji (Mar., Muir's No. 131), on *Saccharum officinarum*. The male pygophor has two, somewhat short, ventral spines, and in profile the ventral margin is acutely produced. The genital styles are somewhat twisted. The ventral wall of the anal tube has 4 spines, the dorsal being longer than the ventral. The contents of the pygophor have been drawn from a specimen in which they were not in repose.

2. *graminicida.*

Pl. XII, figs. 14-15.

The male pygophor has two very short spines on the "lip," and two long curved tusks from the ventral side of the anal tube. The genital styles are apically bispinose and the oedeagus is rather small.

3. *saccharicida.*

Pl. VIII, figs. 5-8, Pl. XII, figs. 11-13.

Dr. Van Deventer has kindly sent me examples from Java. In Pl. 17, fs. 1 and 4 of my former memoir, the obscure median keel of the scutellum was omitted.

The male pygophor has two broad spines, acuminate apically, on the "lip," and two upward curved tusks on the ventral side of the anal tube. The genital styles are broad and rather flat, bispinose apically. The oedeagus is rather long and has a triangular process on the middle of the "back."

4. *vitiensis.*

Pl. XII, figs. 9-10.

The "lip" spines in this are slender and very long. The genital styles are medianly branched, as well as bispinose apically. The oedeagus is long and broad. The spines on the anal tube are bifid.

5. *vastatrix.*

Pl. X, figs. 12-13.

Dr. Van Deventer has sent me a male of this from Java, where however it is apparently not the commonest species, this being

P. saccharicida. (*) The male just mentioned agrees with Breddin's description, whereas the one sent me years ago by the latter was a *Dicranotropis*, not agreeing with his description. The females then sent by Dr. Breddin were true *vastatrix*. The spines on the "lip" are very long and broad in profile. The genital styles are very remarkable, being much branched and apparently somewhat basin-like. The oedeagus seems to emerge much nearer the anal tube than usual. The spines from the latter are triangular and rather broad basally.

6. *sinensis* sp. nov.

Pl. X, figs. 14-15.

Male (*macropterous*): differs from *saccharicida* by the strongly granulate tegmina and the genitalia. The clypeus is mostly dark brown. The paler and darker hues are brighter and more contrasted. The pygophor has long tusklike spines on the "lip," the genital styles are curiously twisted with a crumpled spine apically, the oedeagus is not unlike that of *vitiensis*, but rather shorter. The spines on the anal tube are long and slender.

Female (*brachypterous*): tegmina with pale veins strongly granulate with dark brown; a dark brown spot at the base of the apical cells in the middle and one at the apex of the clavus.

Length (male) 4⅝ (female) 3¼ mill.

Hab. China: Wei Chou (Sept., Muir).

Stenocranus.

=? *Sogata* Distant 1903 Faun. Ind. Rh. III, 465 and 471, f. 258.

1. *agamopsyche.*

Pl. XI, figs. 1-4, and Pl. XVII, figs 6-7.

This species is nearest to *dorsalis* (Fitch). The radial vein forks nearer to the base than the brachial, and there are 8 apical cells, the 4th and 7th being pedicellate.

The male pygophor is emarginate subdorsally and the outline is sinuate. The anal tube has an acute tooth on either side.

* See Kirkaldy "Descriptions et remarques sur quelques Homopteres..... vivant [s] sur la canne a sucre" A. S. E. Belg., L I, 125-7 (1907).

The genital styles are large and of peculiar form. The oedeagus seems to be double, or at least to have two hook-like processes.

The nymph is figured on Pl. XI, figs. 3-4.

2. *pacificus* sp. nov.

Pl. XV, figs. 4-5.

Pale yellow, a broad whitish median line down the middle from head anteriorly to hind margin of scutellum very narrowly bordered with orange-yellow. Frons, between the rather broad whitish keels, fuscous, this being visible dorsally. Mesopleuron with a black dot. Tegmina hyaline, tinged with yellow, veins pale yellow, fuscous at the apices of the apical veins. Eyes red-brown. Head much shorter than in *S. agamopsyche,* dorsally very slightly longer than the pronotum medially.

Male: pygophor yellow, emarginate ventrally.

Profile sinuate. Anal tube prominent, with a downwardly directed spine on each side far down. Genital styles contiguous at base, diverging thence, spined apically. Oedeagus elongate, subascendant, with a recurved process near the apex.

Female: pygophor yellow, ovipositor sheath paler.

Length (male) 4, (female) 4⅞ mill.

Hab. Viti Levu, Rewa (Mar., M.), Navua (Feb., M.), Ba (Jan., M.), (Muir's Nos. 54 and 140), on *Saccharum officinarum* and grass.

Saccharosydne, gen. nov.

Closely allied to *Stenocranus*, but whereas, in the latter the radial vein forks nearer to the base than does the brachial, in *Saccharosydne* the reverse is the case, the radial fork in the latter being very short. There are 7 apical cells, the 4th being pedicellate. The head dorsally is very similar to that of *Stenocranus*, but is angular in profile, the latter being rounded. In profile, the head is very similar in appearance to that of *Tropidocephala*, but the latter is at once separated by the absence of cross keels on the vertex. Tibial spur broad, usual type with many small teeth. Type *saccharivora* (Westwood).

1. *saccharivora*.

Aphis sacchari (p.) Anon., 1833 Mag. Nat. Hist., VI 407, f. 54b. [incorrect]—not described.

Delphax saccharivora Westwood, op. cit. 409, figs. 54*a* and *c* [incorrect]; and 1834 op. cit., VII 496 and 610: Ballou 1905 W. I. Bull., VI, 41 .

Stenocranus (?) *saccharivorus* Van Duzee 1897 Bull., Buffalo Soc., V, 232 and 1907 op. cit.

S. saccharivora Kirkaldy 1906 Bull. Ent. H. S. P. A., I, 409.

This species was originally confused with an Aphis (probably *A. sacchari* Zehntn., but I have not seen specimens).

It is easily recognized by its immaculate pale green colour; spur-spines, &c., black spur with 18-20 spines.

The nymphs differ but little from the adult, excepting the usual manner, and have 2 parallel keels on the frons, close together and not uniting.

Hadeodelphax.

There are at least two Australasian species:

1 Head in profile extending almost or quite the length of the eye in front of the latter..... 1 *pluto*

1a Head in profile scarcely as much as half of the length of the eye, in front of the latter ..... 2 *persephone*

1. *pluto.*

Pl. XVII, fig. 12.

Macropterous form: the posterior angle of the scutellum is white, and the median keel of the pronotum is sometimes pale.

Male: pygophor sinuately rounded viewed from the end. The genital styles are recurved and broadly bifid at their ends.

Length (brach.) 3½, (macr.) 4¼ mill.

Hab. Queensland, Cairns, (July-Aug., P.). Lucinda Point (July, P.); Fiji, (Feb., K.), Navua (Feb., M.). Ba (Jan., M.), Rewa (Apr. and Dec., M.).

var. *pallidior* nov.

I hesitate to describe this as a species, as I have seen only females, and *H. pluto* is certainly subject to natural decoloration.

Macropterous form: Testaceous, frons piceous brown, more or less paler laterally; pronotum obscurely marked with pale brown and scutellum with an obscure longitudinal stripe on each

side of the middle. Tegmina faintly smoky, hyaline, veins mostly dark, first and second apical cells more or less colourless, fifth to eighth more or less dark smoky. Sterna paler than in the type.

Brachypterous form: Pale brownish testaceous, paler beneath; tegmina narrowly smoky apically, commissure whitish, brown near the apex of clavus.

Length (brach.) 2¾, (macr.) 4 mill.

Hab. Queensland, Cairns (Aug., P.); Fiji, (March, K.), Ba (Jan., M.), Rewa (Apr. and Dec., M.).

2. *persephone* sp. nov.

Pl. XVII, figs. 10-11.

Black; vertex, frontal keels dorsally, keels of pronotum and sides of the latter, central keel and posterior angle of scutellum, commissure (interrupted in the middle), whitish. Antennae and legs whitish or whitish testaceous. Tegmina dark smoky, first and second apical cells and the apex of the subcostal cell, hyaline, veins blackish-brown; wings hyaline, veins blackish-brown. The pronotum and scutellum are often more or less decolored (sometimes there are 2 black specks on apical margin of vertex). The vertex proper (basal compartment) does not extend anteriorly so far as the apical margin of the eyes.

Male: genital segments dark brownish. Inside margin of pygophor sinuate. The oedeagus serrate marginally. The genital styles are very irregular in form.

Female: genital segments dark brownish, ovipositor-sheath paler.

Length (brach.) 3, (macr.) 3½-4 mill.

Hab. Queensland, Cairns (July-Aug., P.).

Tropidocephala.

Tropidocephala Stal. 1853 O. V. A. F., XI 226 (type *flaviceps*).

Nephropsia A. Costa 1862 Ann. Mus. Zool. Napol. I 76 (type *elegans*).

Conicoda Matsumura 1900 Ent. Nachr., XXVI 258 (type *graminea*).

Orchesma Melichar 1903 Hom. Ceylon 94 (type *marginepunctata*).

Ectopiopterygodelphax Kirkaldy 1906 Bull. H. S. P. A. Ent. I, 412. (type *eximius.*)

Smara Distant 1906 Faun. Ind. Rh. III, 478, (type *festiva*).

I think these are all synonymous. Tibiae apically with 5 short, black, equal spines as viewed ventrally; spur short, broad, a little concave on one side, without teeth.

Male: pygophor with one spine on or near the lip in the middle.

There are about a dozen species, distributed from Southern Europe to South Africa and to Australia and Japan. The three Australian forms may be differentiated as follows: (in all three, the tegminal veins are granulate and more or less hairy).

1 Nodule near the apex of median vein conspicuous, much larger than the one near the apex of radial, the median nodule split into two small ones which are not contiguous. Tegmina more or less dark with hyaline spots.....(2)

1a The brachial nodules seem a little uncertain. Tegmina pale, concolorous. Nodules are small, not very conspicuous.... ..... 3 *hamadryas*

2 Vertex about twice as long as pronotum, clavus dark smoky..... 2 *dryas*

2a Vertex little longer than pronotum. Clavus dark smoky but widely pale greenish along the sutural margin. 1 *eximius*

1. *eximius* (Kirkaldy).

Pl. XII, figs. 5-7, and Pl. XVII, figs. 15-16.

Add: Clavus more or less widely pale greenish along the sutural margin. Tegmina granulated with whitish, with short, stiff hairs. Genae black, clypeus pale. Antennae pale, marked with black.

The male pygophor is figured (Pl. XVII, figs. 15-16), but neither the artist nor myself has been quite able to make out the structure and I think the interior is partly filled with excretion. I have not had sufficient material for dissection. The lateral margins of the pygophor are greatly sinuate, being produced about the middle and also very curiously towards the dorsum. There is one rather blunt spine near the lip. The genital styles are slender and curve inwards somewhat. There are also two smaller spines dorsal of these, which seem to be appendages of the oedeagus.

Length $3\frac{1}{2}$-4 mill.

Hab. Queensland, Cairns (July-Aug., P.).

2. *dryas* sp. nov.

Pl. XII, figs. 1-4, and Pl. XVII, figs. 4-5.

Allied to *eximius*, but differs as follows:

Frons dark apically and basally, clypeus pale. Pronotum with a black spot at the side (sometimes obscurely indicated in *eximius*). Clavus concolorous, dark smoky. Vertex about twice as long as pronotum, frons narrower than in *eximius*, longer and curved in profile.

The *male* pygophor is very different in appearance from that of *T. eximius*, though the generic character of the single ventral spine is present. The form is more oblong, the sides sinuate and rather bluntly toothed laterally on the ventral margin. The genital styles are very long and curve twistingly near their apex.

The oedeagus seems to arise near the anal tube, and is long and slender, and a little curved.

Length $3\frac{1}{2}$-4 mill.

Hab. Queensland, Cairns (July-Aug.), Bundaberg (Sept.-Dec.), Kuranda (Aug.).

3. *hamadryas* sp. nov.

Head formed as in *dryas*, but colour different and instead of the large dark median nodule, there are 2 non-contiguous, much smaller, pale ones. It is a rather hairier species. Pale greenish, a thin black line on either side of the median keel of the vertex apically. Antennae pale green, annulated with black. Tegmina hyaline, the smoky pattern much as in *dryas*, but very faint; a few scattered darker specks on the apical third. Legs pale testaceous.

Female: genital segment testaceous.

Length $4\frac{1}{4}$ mill.

Hab. Queensland, Cairns (Aug.).

Anectopia, gen. nov.

Closely allied to *Eurysa* Fieber, but the veins of the tegmina in the long-winged form are more complicated apically and the bracial is forked apically.

Head dorsally transverse, not extending apically beyond the eyes; vertex transverse, its two compartments each having a puncture in the middle. Frons broad, median keel almost abso-

lete (*mandane*) or clearer (*igerna*). Antennae scarcely reaching to apical margin of frons, second segment about twice as long as the short first. Pronotum shorter and a little wider than the head, lateral keels turning more or less outwards; there is a puncture on each side of the middle keel. Tibial spur broad at base, foliaceous, with about 40 small, closely-set teeth.

1. *mandane* sp. nov.

Pl. XI, figs. 11-13 and 17; Pl. XIV, figs. 4-6.

Long-winged form. Vertex, genae, pronotum, antennae, legs, etc., more or less dark testaceous; frons and clypeus dark fuscous ,the former gradually deepening to black towards the apex. Sterna, scutellum and abdomen, very dark fuscous or blackish, except the base of the abdomen above (as also most of the metanotum) and abdomen below partly, orange sanguineous. Tegmina hyaline, second apical vein suffusedly, and 5th and 6th (and apex of 4th) apical cells, fuscous; tegminal veins pale, feebly granulate.

Short-winged female. Ovoid, the whole surface shining. Vertex, antennae, frons, pronotum, scutellum, sterna, legs, etc., testaceous more or less tinged with fuscous. Tegmina more or less dark fuscous, subopaque, a little paler internally. Abdomen blackish and fuscotestaceous. Tegmina somewhat convex, not quite reaching so far as the base of the genital segment, apically rounded.

Short-winged male like the long-winged form of the same sex, but the frons paler fuscous; tegmina subopaque, pitchy, not reaching to the apex of the abdomen.

Male pygophor, lip produced suberectly, margin doubly notched close to that point. Genital styles broad at the base, narrowing apically, the apex being acute. The oedeagus is horizontal, projecting between the blunt ventral projections of the anal tube.

Length male, female (macr.) 4, male (brach.) 2 mill.

Hab: Queensland, Cairns (July-Aug.), Kuranda (Aug.).

2. *igerna* sp. nov.

Dark fuscous or blackish-brown; frons a little paler. Antennae fusco-testaceous; legs testaceous.

Similar to the genotype, but the frontal keel is distinctly more pronounced, though the frons is still highly polished, and the tegmina are much shorter and less convex.

Length 1⅝ mill.

Hab: Queensland, Bundaberg.

Only a single female unfortunately.

Haplodelphax gen. nov.

Allied to *Megamelus*; characterized by the structure of the vertex and by the radial vein not being forked.

Head dorsally longer than wide, produced in front of the eyes, apically rounded, the lateral and anterolateral keels being just interior to the apparent margins; within this is a keeled triangle, the acute anterior angle touching the anterior margin of the head; there is also a median keel which forks a little anterior of the middle, the short branches meeting the sides of the triangle a little anterior of its middle. Frons nearly twice as long as wide, lateral margins gently rounded; there is a strong median keel which meets the base without forking; apical margin angulate; basally a little of the vertex is visible laterally. Antennae short, subcylindric, not reaching apex of clypeus, second segment about twice as long as the first. Genae triangular, the apex blunt, that is to say, the median keels do not touch the lateral keels of the frons apically. Clypeus tricarinate. Pronotum tricarinate, lateral keels fairly straight, diverging posteriorly, usually not quite reaching the posterior margin. Scutellum tricarinate. Dimorphic as regards the tegmina; with the brachial vein in the long-winged form, forking close to the subapical line, the radial not forked; there are 6 apical cells, the first small ,sometimes divided. Tibiae apically with 5 spines of irregular size; spur of usual form, with 10 spines. First segment of hind tarsi longer than second and third together.

There are two species, of which I have seen only females. *H. iuncicola* is the genotype. The brachypterous forms may be separated as follows:

1 Tergites yellowish, faintly marked with pale brown..... ..... 1 *iuncicola*

1a Tergites brownish, marked with black and yellowish. 2 *naias*

1b Tergites immaculate yellowish.....3 *euronotianus*

1. *iuncicola* sp. nov.

Pl. XII, figs. 8-9.

Brownish testaceous, frons with scattered yellower specks. Tegmina hyaline, veins brownish or pale yellowish; wing veins dark brown. Tergites yellowish, obscurely spotted submedianly, in a row, with pale brown, in the short-winged form; in the macropterous form, the tergites are more or less suffused with blackish-brown. Tegmina not granulate, not piliferous.

Female ovipositor black.

Length: $3\frac{1}{2}$ (macropterous), $2\frac{7}{8}$ mill (brachypterous).

Hab: Queensland, Childers (Koebele's No. 2264 in part, on *Juncus*) Bundaberg (Sept.-Dec.).

2. *naias* sp. nov.

The *brachypterous females* differ from those of the genotype, by being darker. The tergites are brown with a very narrow yellowish median line; there is a submedian and a lateral stripe on each segment, both being narrow and black, and the former is bordered internally by a narrow yellowish stripe, and externally on the apical three tergites by a similar one, etc.

Length: 3 mill.

Hab: Sydney, New South Wales (Jan., K.).

3. *euronotianus* sp. nov.

Separable from *H. naias* by the smaller size, paler colour and longer vertex.

Pale yellow, immaculate. Eyes grey-black. Head dorsally one-half longer than wide between the eyes (in *naias* it is only between $\frac{1}{3}$ and $\frac{1}{4}$).

Female ovipositor sheath greyish fuscous.

Length 3 mill (brach.)

Hab: New South Wales, Sydney (Feb., K.).

I have seen females only.

Gelastodelphax.

1. *histrionicus.*

Pl. XVI, figs. 1-3 and Pl. XVIII fig. 16.

The male pygophor is very remarkable. The lip is strongly produced on each side, and there are two smaller projections

between these. The genital styles are elongate and bent at the apex. The oedeagus is horizontal and is subcultrate with, apparently, a long projection from one side.

Smicrotatodelphax.

1. *perkinsi.*

Pl. XVI, figs. 14-15 and Pl. XVIII fig. 14.

The male pygophor is roundly angular at the lip, and curvedly produced in a somewhat hollow manner dorsally at the sides. The genital styles bear some little resemblance to those of *Perkinsiella saccharicida,* but are more attenuated at the base and thickened inwardly there.

Megamelus.

I have temporarily retained this group as distinct from *Delphacodes.* The species included have the head distinctly produced before the eyes, the junction of the frontal keels almost on the top of the head, the pronotal keels not turning upwards, the first segment of the hind tarsi longer than the other two together. They have a common facies of a broad median longitudinal pale stripe, and dark lateral margins.

It seems to be a generic character that the ventral margin of the male pygophor is deeply emarginate 3 or 4 times; it is so at least in *M. notula, persephone* and *proserpina.*

1. *proserpina* sp. nov.

Pl. X, figs. 5-7 and Pl. XII, figs. 19-21.

Blackish fuscous with a broad, pale, ivory white band from apex of vertex to apex of abdomen, usually interrupted broadly on the middle of the abdomen, the pale colour of the abdomen is also rather yellower. Frontal keels paler fuscous. Sterna and sternites largely blackish fuscous; labium, antennae and legs pale, the antennae tinged with brownish; fore tarsi and first segment of hind tarsi blackish fuscous. Tegmina subhyaline, blackish fuscous, paler internally and exteriorly, greater part of commissure ivory white. Wing veins blackish fuscous. Antennal segments subequal. Tegminal veins not or scarcely granulate.

Male: the anal tube has two strong spines proceeding from the ventral wall in the middle; the pygophor is deeply quadri-emarginate on the ventral margin. Genital styles broad at the base, tapering and curving towards the apex; oedeagus rather small.

Length 4 mill.

Hab: Fiji, Suva (Mar., K.).

persephone sp. nov.

Pl. XIV, figs. 7-9.

This is scarcely separable except by the genitalia, from *proserpina*, but whereas all the specimens of the former I have seen are macropterous, the present species is known to me only in its brachypterous form. The tegmina extend to about half the length of the abdomen; truncate apically, slightly obliquely.

The *male* pygophor is 5 times emarginate apically, the central production being emarginate to allow the egress of the elongate oedeagus, which is widely bifid basally, the projections being slender and acute. The anal spines are not very dissimilar to those in *proserpina*, but are longer and more divergent apically. The genital styles are somewhat like those of *proserpina*.

Length: 2⅔ mill.

Hab: Queensland, Cairns (July-Aug.).

3. *sponsa* sp. nov.

Pl. X, figs. 8-9.

Pale ferruginous, a broad ivory white stripe from apex of head (dorsally) to apex of abdomen. Beneath pale ferrugino-testaceous, legs testaceous, frons medianly rather broadly ivory white. Tegmina subhyaline, tinged with yellowish, subcosta and commissure, ivory whitish. Head slightly produced in front of eyes. Antennae reaching well beyond base of clypeus, first segment nearly as long as the second. Tegmina reaching a little beyond apex of abdomen, but membrane scarcely formed.

Length 3⅓ mill.

Hab. Queensland, Cairns (July).

I have seen only brachypterous females.

"Delphax"

Kelisia Fieber, l. c. type *guttula* (Germ.)
Chloriona, Fieber, l. c. type *unicolor* (H.-S.)
Delphax Fieber, op. c., 520, (nec Fabr.)
Delphacinus Fieber, l. c. type *mesomelas* (Boh.)
Delphacodes Fieber, op. c., 524 type *mulsanti* Fieb.
Liburnia auctt. nec Stal.
Chlorionidea Loew 1885 Verh. Zool. bot. Ges. Wien XXXV 356 type *flava* Loew.
Delphax Fieber, op. c., 520 (nec Fabr.)
Delphacissa Kirkaldy 1906 Entom, type *uncinata.*
Sogata Distant 1906 Faun. Ind. Rhynch. III, 465, type *dohertyi* Dist.
Nilaparvata Distant l. c. type *greeni* Dist.

The above citation does not mean that I consider all these groups to form one genus, but simply that I cannot yet arrange the Australian and Fijian species under them, on the characters proposed for them. One difficulty lies in the large proportion of forms known only in a brachypterous state. Then again I place little reliance on many trusted characters.

Distant has used the length of the head, both dorsally and ventrally, as a principal character; this I cannot admit. The fact that the head is longer than wide dorsally as opposed to not longer than wide, if unaccompanied by other strong characters, is to me of no generic value. The same, in perhaps a rather less degree, with the frons, and also in this case as regards the contour. The comparative length of the cylindric antennae is also, within certain limits, not I think, of generic value.

Great stress is laid on the lateral keels of the pronotum, except by Distant, who disregards them. This seems to me a somewhat variable character and in any case a very difficult one to appreciate. In a few forms these keels are no doubt sharply separable into two categories, viz: (1) those which are straight, scarcely divergent posteriorly and reach the posterior margin of the pronotum, and (2) those which curve under the eyes and never reach the posterior margin. There are a large number of forms however which are intermediate, which proceed straightly in fact but fork not far from the posterior margin and proceed obscurely in two directions, under the eyes and obscurely to the posterior margin. There are also intermediate

forms between the two. Moreover in forms in which these keels curve under the eyes in long-winged forms, there seems to be a tendency towards a straightening of the keels in the short-winged forms. The venation is of comparatively small value. The relative proportion of the first segment of the hind tarsi to the other two together is used as a character of high importance by many authors, but I cannot so regard it.

The characters which appear to me to be of generic value in this section, lie in the genitalia and the tibial spurs, though I am not prepared, without the examination of a large series of European and American forms, to formulate genera based on them. ,

I have therefore thought it best to include all the Australo-Fijian species belonging to these "genera", in '*Delphax*', thereby obviating future synonymic difficulties, as *Delphax* is a synonym and has no generic value. It should be noted also that '*Liburnia*' often used for *Delphacodes*, is a strict synonym of *Embolophpora*.

The Australo-Fijian species of this complex are disposed artificially as follows:

1 Head, pronotum and scutellum fuscous or black with a more or less sharply contrasted pale longitudinal stripe..(2)
1a Head, &c., without such a stripe.....(7)
2 Ground colour of head, pronotum and scutellum flavo-fuscous ..... (3)
2a The same blackish-brown.....(6)
3 Long-winged forms: tegmina with internal half of membrane smoky .....(4)
3a Short-winged forms.....(5)
4 Narrower and longer, keels more pronounced..13 *geranor*
4a Broader and stouter, keels less pronounced....12 *kolophon*
5 Tegmina dark apically, with separate round black spot at apex. .....14 *kaha*
5a Tegmina dark apically, without separate round black spot. ..... 15 *leimonias*
6 Long-winged form: tegmina more or less hyaline:
A. Head dorsally not longer than wide.....16 *anemonias*
AA. Head dorsally distinctly longer than wide.*22 eupompe*
6a Short-winged form: tegmina dark, with a narrow white border. .....17 *pylaon*
7 Frons yellowish, pale fuscous, or subsanguineous, practically concolorous. .....(8)

7a Frons with the lateral keels paler than the ground colour. ..... (11)
8 Frons dull yellowish or testaceous.....(9)
8a Frons shining, fuscous or subsanguineous.....(10)
9 Hind margin of pronotum widely angulately emarginate. ..... 3 *parysatis*
9a Hind margin truncate.....2 *ordovix*
10 Middle keel on face, especially on clypeus, paler than the ground colour.....9 *hyas*
10a Middle keel concolorous with the disk.....10 *disonymos*
11 Ground colour of frons pale yellow.....(12)
11a Ground colour dark yellow.....(15)
12 Tegmina blackish. .....8 *matanitu*
12a Tegmina yellowish hyaline. .....(13)
13 Head dorsally longer than wide.....11 *ochrias*
13a Head dorsally not longer than wide.....(14)
14 Male: pygophor blackish. .....7 *lazulis*
14a Male: pygophor yellowish. .....6 *dryope*
15 Head distinctly produced in front of the eyes.....(16)
15a Head not, or scarcely, produced in front of the eyes...(18)
16 Tegmina dark fuscous, whitish opaque apically..... ..... 5 *albotristriatus*
16a Tegmina hyaline or cinereous or fuscous, immaculate..(17)
17 Frons long and narrow, lightly and gradually narrowing basally; lateral keels of pronotum not curved under the eyes, but reaching posterior margin of pronotum.4 *ostorius*
17a Lateral margins of frons slightly sinuate, a trifle broader apically than basally; lateral keels of pronotum curving outward, not reaching posterior margin of pronotum..... ..... 1 *thyestes*
18 Long-winged forms. .....(19)
18a Short-winged forms. .....(20)
19 Scutellum black. .....19 *astyanax*
19a Scutellum with the hind angle white.....18 *puella*
20 Apical margin of tegmen very narrowly white.....(21)
20a Apical margin not continuously white.....20 *algebra*
20b Apical margin rather broadly white.....17 *astyanax*
21 Tegmina deep fuscous.....21 *dilpa*
21a Tegmina pale, partly smoky.....18 *puella*

1. *thyestes* sp. nov.

Pl. X, figs. 12-13.

Fuscous or blackish-brown, head and keels yellowish fuscous. Antennae and legs fuscous. Pronotum and scutellum dirty yellowish-grey, middle keel and posterolateral margins of the latter sometimes very narrowly pale, two obscure pale longitudinal stripes.

Head dorsally longer than wide, produced a little in front of the eyes, vertex with a keel down the middle. Frons a little broader apically than basally, keels distinct but filiform. Antennae reaching beyond the base of the clypeus, segments nearly subequal in length. Pronotum with lateral keels fairly straight but very divergent, not reaching the hind margin, but continuing parallel with it in the form of 2 or 3 granules, hind margin very obtuse-angularly emarginate. Tibial spur with about 16 well developed spines, first segment of hind tarsi longer than the other two.

Long-winged form: Scutellum about twice as long as pronotum. Tegmina hyaline cinereous, with 7 apical cells, generally unforked (this varying in the same individual), veins feebly granulate, pale yellowish fuscous.

Short-winged form: Scutellum shorter than pronotum. Tegmina reaching to about one-half of the length of the body, hyaline cinereous, apical margin subcrescentiformly pale with a dark fuscous spot (this may be obscurely marked); not quite contiguous apically, apical margin subtruncate, a little rounded.

Length 3 (brach.)-4½ (macr.) mill.

Hab. Queensland: Bundaberg (Nov.), Brisbane (June).

Only females have been seen.

This species does not fit into any described genus, being perhaps partly *Chloriona*, partly *Delphacissa*.

2. *ordovix* sp. nov.

This short-winged form is similar in appearance to that of *D. thyestes*, but the vertex is shorter and narrower, the frons yellowish fuscous, concolorous, polished and shining, parallelsided, the keels filiform and not prominent. First antennal segment about three-fourths the length of the second. Lateral keels of pronotum curved under the eyes. Tegmina apically rounded, shining, obscure yellowish fuscous, apex of clavus with a dark

spot. Tibial spur with about 30 minute spines; first segment of hind tarsi longer than the other two.

Length 3 mill

Hab. Queensland, Brisbane (June, No. 2264 in part.).

I have seen only one female.

This species is apparently a *Delphacodes*.

3. *parysatis* sp. nov.

Pl. X, figs. 10-11.

Allied to the last, but the legs, &c., are testaceous, and the pleura are not noticeably marked or spotted. Head dorsally scarcely as long as broad. Pronotal keels as in *thyestes*. Tibiae and tarsi as in *ordovix*.

Long-winged form: tegmina hyaline tinged with yellow, apical veins infuscate and a small dark lanceolate spot near the apex of the clavus. Scutellum about two and a half times as long as the pronotum which is obtuse-angularly emarginate.

Short-winged form: allied to that of *ordovix* but the legs &c., are testaceous, and the pleura are not noticeably spotted or marked. Pronotum about as long as scutellum.

Length (Macr.) $4\frac{3}{4}$, (brach.) $3\frac{1}{2}$ mill.

Hab. Queensland, Cairns (Aug.).

Only females, unfortunately, of this species which is more or less a *Delphacodes*.

4. *ostorius* sp. nov.

Pl. XVI, figs. 10-11.

Head dorsally longer than broad. Vertex with a keel down the middle. Scutellum about twice as long as pronotum. Tibial spur with about 23 spines, hind tarsi as in the last.

Long-winged male: Dark fuscous or blackish brown, with pale keels, legs, etc. Tegmina dark fuscous, subhyaline, immaculate, with 7 apical cells, the third apical vein being also forked, veins very feebly granulate.

Short-winged female: Similar in appearance to *D. thyestes*, but the frons is long and narrow, slightly and *gradually* narrowing basally. Lateral keels of pronotum not curved under the eyes, but reaching posterior margin of pronotum. Tegmina immaculate, apically broadly rounded, reaching to about one-half of

the entire length of the insect. First antennal segment about one-half of the length of the second.

Male pygophor rounded at the end, the dorsal margin produced at each side, the produced part flattened and bent over at the end. The genital styles are compressed, the apices somewhat acute and bent.

Length 2¾ (brach.) 4 (macr.) mill.

Hab. Queensland, Cairns (Aug., 2264 in part).

5. *albotristriatus* sp. nov.

Pl. XX, figs. 15 and XIV, figs. 1-3.

Shortwinged form allied to *thyestes*.

Dark fuscous, or blackish, a little less dark on the vertex. Eyes castaneous or fuscocastaneous. Antennae, keels on frons and clypeus, legs, etc., fuscotestaceous. Pronotum (except ventrally), posterolateral margins of scutellum, subcostal vein, apical margin of tegmina broadly, last two or three tergites, etc., opaque whitish.

Keels all strong, even on the clypeus. Head dorsally longer than wide, produced a little in front; frons widening curvedly towards the apex but narrowing very slightly at the apical margin. Pronotal keels divergent, not curving under the eyes and not reaching the hind margin. Scutellum shorter than pronotum. Tegmina nearly square, extending to about half the length of the abdomen, subtruncate apically and contiguous along the commissure. Tibial spur with about 16 well developed spines, tarsi as in the last.

Male pygophor apically rotundate oval, the rim thickened about the anal third and produced there in a short spine. Genital styles broad, bifid apically.

Length 2¼ 2¾ mill.

Hab. Queensland, Brisbane and Bundaberg (Nov.).

I have seen males only.

6. *dryope* sp. nov.

Pl. XVI, figs. 12-13.

Somewhat like *D. osborni*.

Yellowish testaceous, frontal and clypeal keels whitish-yellow, the former very narrowly bordered internally with dark fuscous. (in the males the keels are less broad and less whitish). Pro-

notal keels whitish yellow, a dark fuscous spot on each side anteriorly. Scutellum medio-longitudinally pale with a pale brownish-yellow sinuate line on either side. Underneath pale testaceous, a fuscous spot on each mesopleuron. Tegmina hyaline, veins pale except the apical ones, which are fuscous. Lateral margin of frons subparallel, slightly narrowed basally, a little more so in the male than in the female, keels rather flattened. Antennae not reaching beyond base of clypeus, second segment nearly twice as long as the first. Pronotum as in *osborni*. Tibial spur with about 27 spines. Tegmina with 8 or 9 apical cells, the 4th, 7th being pedicellate.

Male pygophor pale yellowish: subrotundate viewed end-on, the lateral margins thickened and produced into a short spine near the anal tube Anal tube with a elongate, strong, downward directed tooth from its ventral wall on each side, and about 5 tiny spines between oedeagus subhorizontal, elongate. Genital styles divergent, apically bifid.

Female abdomen beneath more or less fuscous.

Length (brach.) 2½ (macr.) 4½ mill; both sexes are dimorphic.

Hab. Queensland, Cairns (Aug.) Redlynch (July) Kuranda (Aug.); Fiji, Rewa (Dec., Muir).

1. *lazulis* sp. nov.

Pl. XVIII, figs. 1-3.

I can distinguish this from the last described only by the rather smaller size, by the blackish pygophor in the male and different genitalia in that sex I think the females would be very hard to tell apart from those of *dryope*. I have seen only brachypterous forms.

Male pygophor blackish, subrotundate viewed end-on, the lateral margins somewhat sinuate; anal tube with a projection on each side, pointing downwards. Genital styles not unlike those of *dryope*, but the outer apical angle blunter.

Length 1⅞ mill.

Hab Queensland, Cairns (Aug.), Redlynch (July).

8. *matanitu* sp. nov.

Pl. XVI, figs. 4-5; & Pl. XVIII, fig. 15.

Pale brownish-yellow, or yellowish-testaceous, keels of frons slightly paler.

Tegmina black. Head dorsally scarcely extended before the eyes. Pronotal keels curvedly divergent. Spur with 15 or 16 spines.

Male: pygophor in profile greatly emarginate ventrally. Genital styles divergent, the apices truncate and thickened.

Length 2 mill. (brachypterous).

Hab. Viti Levu, Rewa (Dec., M.), Ba (Jan. ,M.), Navua (Feb., M.).

The vertical cross keels are obscure and are not shown on fig. 15 of Pl. XVIII.

9. *hyas*, sp. nov.

Somewhat like *dryope,* but the keels of the frons are only very slightly lighter than the pale ochraceous disk; antennae not reaching to base of clypeus. Tegmina hyaline, veins pale yellow, tending to pale fuscous on the membrane, granules pale fuscous. Spur with 22 spines.

Male: pale ochraceous; tergites broadly fuscous medio-transversely, orange basally. Sternites more or less dark fuscous partially, pygophor suffused with fuscous beneath.

Female: almost uniform, more or less pale ochraceous.

Length 3⅜ mill.

Hab. Queensland, Redlynch (July), Kuranda (Aug.).

10. *disonymos* sp. nov.

Pl. XVIII, fig. 4.

Allied to the last. Pale yellowish testaceous. Head very slightly produced before the eyes; lateral margins of frons subparallel, slightly narrowed basally,keels flattish. Antennae not reaching beyond base of clypeus. Lateral keels of pronotum curving outwards. Tegmina with 6 unforked apical cells. Spur with 16 spines.

Male: pygophor rounded, subtransverse viewed end on. The genital styles are elongate, gradually widening a little towards the apex, where they are truncate.

Length 3¾ mill.

Hab. Fiji, Rewa (male, Apr., M.), Suva (female Mar.,K.).

11. *ochrias* sp. nov.

Has the head form of *Chloriona*.

Ochraceous or testaceous. Sterna, legs, etc., paler, a narrow somewhat paler median line down the tergites (and in the macropterous form, the space between the lateral keels of pronotum and scutellum is paler). Antennae not reaching to apex of frons, first segment scarcely longer than wide.

Long-winged forms: veins feebly granulate.

Short-winged forms: tegmina narrowly rounded, reaching to about half the space between the tegulae and the apex of the abdomen.

Length 3½ (macr.), 2½ mill. (brach.).

Hab. New South Wales, Sydney (Jan., Koebele's No. 2232), Fiji (Mar., K.), Rewa (Mar., M.).

Koebele & Perkins collected one imperfect macropterous and 15 brachypterous adults and 3 nymphs, all females. The type is a macropterous female from Fiji, taken later by Muir.

To this species probably also belong some forms in which the ochraceous is replaced (as is sometimes the case in other ochraceous species) by orange-sanguineous or sanguineous.

Hab. Queensland, Bundaberg (Sept.-Nov.), Brisbane (June) Cairns (Aug.).

12. *kolophon* sp. nov.

Pl. XV, figs. 9-11.

Testaceous, somewhat paler on pronotum and scutellum medianly; frons, between lateral keels and central keel, sometimes pale fuscous. Pronotum and scutellum more or less fuscous exterior to the lateral keels.

Tegmina hyaline, veins pale; interior two-fifths smoky, the veins on this fuscous; subcostal vein smoky, commissure whitish. Antennae not reaching to apical margin of frons, second segment twice as long as the first.

Male. Tergites, including pygophor, dark fuscous or blackish-brown, a transverse yellowish-brown, or orange, sanguineous band near the base. Sterna and sternites mostly dark fuscous, the latter basally yellowish-brown, with a spot or two laterally. Pygophor subtrotundate, viewed end on, the outline sinuate. Anal tube with 2 elongate spines from the middle, directed downwards,

almost embracing the upwardly directed oedeagus. Genital styles broad basally, subconstricted just before their bifurcation, the forks being long and acute.

Female. Sterna and abdomen pale yellowish-orange; tegmina not so smoky as in the male. Pronotum and scutellum scarcely fuscous laterally.

Length 3 mill.

Hab. Queensland, Redlynch (July), Cairns (Aug.), Kuranda (Aug.).

The keels are not very prominent.

13. *geranor*, sp. nov.

Pl. XVI, fig. 3.

Superficially like *kolopohn*, but narrower and longer ,keels more pronounced, etc.; median longitudinal stripe from head to scutellum whiter. Frons intercarinally fuscous. The male genitalia are also very different.

Male: pygophor rather elongate viewed end-on, and thickened inwardly at the sides. The anal tube has a lateral spine on each side directed downwards and apparently 2 downwardly and outwardly directed spines between the above. Oedeagus of remarkable form (shown in the figure). Lip produced somewhat in the middle. Genital styles contiguous longitudinally at base, diverging their lateral margins angulate in the middle, apically truncate, the apical angles on each side being acute.

Length $3\frac{1}{3}$ mill.

Hab. Queensland, Cairns (July).

14. *kaha* sp. nov.

Pl. XVI, figs. 8-9.

Dark brownish-black, a whitish median stripe on head dorsally, pronotum and scutellum. Commissure basally the same. Frontal keels, antennae, legs, spots on pleurites, etc., yellowish testaceous. Tergites orange-yellow, more or less marked with fuscous, especially lateral. Spur with 15 teeth. Pronotum with lateral keels curvedly divergent.

Long-winged: tegmina milky hyaline and dark fuscous (as shown in figure).

Short-winged: tegmina fuscous, commissure whitish, a black spot on apical margin of tegmina.

Male: pygophor with sinuate outline. Lip produced. Anal tube without spines. Oedeagus with a curious angularly bent appendage. Genital styles rather small, obliquely truncate basally, nearly touching apically.

Length 3 (Mar.), 2 (brach.) mill.

Hab. Queensland, Kuranda (Aug.).

15. *leimonias* sp. nov.

Short-winged form: closely allied to the last, but tegmina dark fuscous subhyaline, apically opaque, margins ivory-white, broken in places by the dark tint. Median keel of frons and clypeus ivory-white. Tergites dark fuscous, medianly white.

Length 2⅔ mill.

Hab. Queensland, Cairns (Aug.).

I have only seen females.

16. *anemonias* sp. nov.

Pl. X, figs. 1-2 and Pl. XVI, figs. 1-2.

Dark brownish black. Head dorsally, pronotum and scutellum with a broad median, ivory-white stripe. Commissure and frontal clypeal keels narrowly, lateral and posterior margins of the ventral part of the pronotum, tegulae, etc., white. First segment of the antennae blackish brown, second dark fuscous. Lateral keels of pronotum and scutellum narrowly obscurely ferruginous. Tegmina hyaline, veins pale fuscous except the very pale subcosta, outer fork of radial, etc. Femora more or less dark fuscous, tibiae and tarsi testaceous. Pleurites bordered pallidly, more or less. Head not extending anteriorly in front of eyes. Lateral keels of pronotum curvedly divergent. Spur with 19 spines.

Male pygophor apically truncate in profile. Oedeagus horizontally projecting near the anal tube. Genital styles broadening towards the apex, which is truncate, inner margins irregularly sinuate.

Length 3 ⅓ mill.

Hab. Queensland, Redlynch (July), Cairns (July-Aug.), Kuranda (Aug.).

17. *D. pylaon* sp. nov.

Pl. XV, figs. 12-14.

Close to the last, but the lateral keels straightly divergent, and spur with 19 spines.

Long-winged form (male) tegmina much shorter. Ground color of pronotum and scutellum paler fuscous, lateral keels white; the mesosterna bordered exteriorly with white.

Short-winged form (female of same species?); blackish-brown, lateral keels of pronotum white. Tegmina subhyaline, dark fuscous, rather broadly (comparatively) bordered exteriorly from exterobasal angle to interobasal angle with ivory-white. Tergites with a median line of ivory white and a lateral and two sublateral, similar (but more broken up) lines.

Male pygophor triemarginate towards, and at the ventral margin. Genital styles widening out towards their apex, which is subtruncate, the angles rather rounded, the inner margins on the apical half, irregularly sinuate. Oedeagus arising close to the ventral wall of the anal tube and bending outwards and downwards a little over the genital styles. There are no spines on the anal tube ventrally.

Length 2½ (macr.), 2¼ (brach.) mill.

Hab. Queensland, Cairns (July), Brisbane (June).

18. *puella*.

Pl. XV, figs. 1-3.

Liburnia puella Van Duzee; Forbes and Hart 1900 Bull. Illinois Agr. Sta. 60 p. 416. Pl. 1, f. 2.

Hab. Queensland, Cairns (Aug.), Redlynch (July); Fiji, Suva (Mar., K.).

Also from North America, New Jersey, New York, Iowa and Mississippi (Van Duzee), Ohio, Kentucky (Swezey), Illinois (Forbes & Hart), on grass, grains and sugar beet.

The basal segment of the antennae varies from testaceous to blackish. The middle keel of the frons in the Australasian individuals is usually blackish, though sometimes paler fuscous; the Americans are usually whitish. The spur has about 20 spines.

Male pygophor oval; anal tube cleft ventrally, with 2 diverging spines. Oedeagus a little swollen apically. Genital styles small and laterally arched, nearly meeting apically. This species is very close to *albicollis*, but is a little larger, the posterior angle

of the scutellum white, the frons is coloured differently and the male pygophor different. I am indebted to my friend Mr. Van Duzee for a pair of his *puella*. *

19. *astyanax* sp. nov.

Pl. X, fig. 20; Pl. XIV, figs. 13-15. **

Closely allied to *D. puella*, but smaller, the genae and scutellum entirely black, and the lateral margins of the frons more rounded laterally. In the short-winged form, the tegmina are subtruncate, and broadly margined with white apically. Spur with about 14 spines.

Male pygophor exceedingly remarkable. The anal tube is elevated and shaped somewhat like a square hood. The lateral margins of the pygophor close to the anal tube project acutely and somewhat curvedly. Genital styles truncate apically, the angles being acute and prominent. The oedeagus has a crown of 4 long spines (or is apically elongately quadrifid in other words).

Length about 1⅞ (brach.), 2¼ (macr.) mill.

Hab. New South Wales, Mittagong (Jan., K.).

20. *algebra* sp. nov.

Pl. X, figs. 16-17; Pl. XV, figs. 15-16.

Closely allied to *D. puella* but (in the short-winged forms at least) the tegmina are deeply fuscous and more opaque; basal half of commissure and a tiny spot near the apex internally whitish. The median keel of the frons is rather thick and whitish, and the lateral keels of the pronotum are straight and reach the hind margin. Spur with 33 spines.

Male pygophor suboval, broadly produced near the anal tube, which has 2 projections from the ventral wall. The genital styles are widened and truncate apically, the outer angles rounded, the inner acutely produced.

Length 1⅞ mill (brachypterous form only known).

Hab. Queensland, Kuranda (Aug.), Cairns (July-Aug.).

* Dr. Melichar kindly sent me some years ago a male of the Sinhalese *albicollis* Motschoulsky, the male pygophor of which is figured Pl. 14 figs. 10-12. It is subrotundate viewed end on and has a flat projection on each side near the anal tube, turning a little outwards and very conspicuous in profile. The anal tube has no spinose projections. The oedeagus is apparently short. Genital styles less arched than in *puella* and dilated apically, being shortly bifid, the angles acute.

** Pl. 10 f. 20 is not quite accurate, the lateral margins of the vertex should be more concave.

21. *dilpa*, gen. nov.

Pl. X, figs. 18-19; Pl. XVI, figs. 6-7.

Short-winged form similar to *algebra*, but the white apical margin of the tegmina is very narrow, and the male genitalia are very different.

Male pygophor suboval, margins sinuate. Oedeagus horizontal, elongate. Genital styles inwardly curved, the apices truncate, angles prominent and acute, or subacute.

Length 1½ mill.

Hab. New South Wales, Mittagong (Jan., K.).

The vertex in Pl. X, fig. 18 is a little too prominent.

22. *cupompe* sp. nov.

Pl. X, figs. 3-4; Pl. XII, figs. 16-18.

Superficially like a *Megamelus*, but the male pygophor is not of the *Megamelus*-type. Perhaps a *Kelisia*.

Dark fuscous or blackish; vertex, antennae, pronotum and scutellum, between the lateral keels, legs, commissure, yellowish-white.

Tegmina dark fuscous, first and second, and the outer part of 3rd and 4th, apical cells, a little paler. Veins closely but flatly granulate. Frons laterally acute and subreflexed, gradually narrowing towards the base; the central keel strong but rather flat: antennae short, first segment scarcely half the length of the short second. There are 9 apical cells, 4 and 7 being pedicellate. Tibial spur with 13 spines.

Male pygophor somewhat diamond-shaped, and is thickened internally at the middle laterally, anal tube with 2 median, strong, straight spines, between which arises the upward and outwardly directed oedeagus. The genital styles are divergent, elongate, acute, not bifid.

Length 3 mill.

Hab. New South Wales, Sydney (Jan.); Queensland, Cairns (Aug.), Bundaberg (Nov.); Fiji, Suva (Mar., K.).

The cross keels on the vertex in Pl. X, fig. 3 were inadvertently omitted.

Derbidae.

This family contains the most delicate and remarkable forms of the Fulgoroidea, or even of the Auchenorhynchi. While such forms as *Nisia* and *Philadelphcia* seem to have little in common, there are numerous intermediate forms which render sharp groupal separation difficult. There seem to be two main subfamilies, viz: (1) Nisiinae, represented by *Nisia* in which the last segment of the labium is comparatively elongate, and the anal vein of the clavus strongly granulate, and (2) Derbinae represented by *Philadelpheia*, in which the last segment of the labium is annuliform, generally a little wider apically than basally, and the anal vein not granulate, the latter division being much more numerous in genera and species. Unfortunately in the genera *Thyrocephalus*, *Basileocephalus* and *Phaciocephalus*, we have a small intermediate group in which the anal vein is granulate and the last segment of the labium annuliform.

In the following table of Australo-Fijian genera, I have endeavoured to include those recently described by Distant. As the latter mentions the shortness of the apical segment of the labium as a character of the (sub-) family in the Oriental forms, (he includes *Nisia* in which it is comparatively elongate!), I have supposed that his Australian genera have the same character.

1 Last segment of labium somewhat elongate, (anal vein and head granulate) ..... (2)
1a Last segment of labium annuliform ..... (4)
2 Head strongly carinate along the middle....3 *Phaconeura*
2a Head not medianly carinate ..... (3)
3 Lateral keels of frons parallel ..... 1 *Nisia*
3a Lateral keels of frons narrowing basally as seen from below ..... 2 *Suva*
4 Anal vein of tegmen granulate (*)..... (5)
4a Anal vein simple (*)..... (7)
5 Pronotum more or less normal; vertex anteriorly truncate ..... 6 *Thyrocephalus*
5a Pronotum laterally laminate, sinuate, recurved, partly enclosing antennae; vertex not truncate anteriorly....(6)

(*) Distant has not mentioned in any of his descriptions a most important character, viz.: The granulation of the claval veins and of the head, etc., so that I have arranged his genera under the second division, except *Urabunna*, in which his artist seems to have recognized the importance of the claval granulation, and which is only a synonym of *Basileocephalus*.

6 Lateral keels of frons continuing acutely to apical margin ..... 4 *Basileocephalus*

6a Lateral keels of frons flattening out apically .... 5 *Phaciocephalus*

7 Antennae not projecting beyond the anterior margin of the head (in profile or dorsally) .....(8)

7a Antennae projecting beyond the anterior margin of the head ..... (23)

8 Antennae scarcely more than twice as long as wide....(9)

8a Antennae more than three times as long as wide.....(20)

9 Wings developed ..... (10)

9a Wings rudimentary ..... 19 *Muiria*

10 Head narrower than pronotum .....(11)

10a Head wider than pronotum.....18 *Philadelphcia*

11 Subcostal vein of tegmen simple .....(12)

11a Subcostal vein of tegmen granulate .....17 *Nesoniphas*

12 Tegmina broader and less elongate, or if elongate then strongly widening apically; wings longer in proportion ..... (13)

12a Tegmina narrow and elongate; wings much shorter.... ..... 16 *Proutista*

13 Vertex transverse, apically truncate, separated from frons by a transverse keel, scarcely extending before the eyes ..... 7 *Lamenia*

13a Vertex more or less elongate, distinctly not transverse.(14)

14 Vertex elongate, apically truncate, tegmina widening very strongly towards the apex .....15 *Lyricen*

14a Vertex with lateral margins acute and parallel, not separated from the frons by a cross keel.....8 *Rhotana*

14b Vertex elongate, angulate, extending in front of the eyes ..... (15)

15 Antennae not (or very feebly) tuberculate .....(16)

15a Antennae subrotundate, strongly tuberculate.....13 *Kaha*

16 Head sublinearly elongate as seen dorsally, more than four times as long as an eye.....14 *Vivaha*

16a Head not as above .....(17)

17 Lateral margins of vertex narrowly (or not) reflexed, closer at base, feebly sensorized .....(18)

17a Lateral margins of vertex more reflexed, well separated at base, usually strongly sensorized .....(19)

18 Antennae short .....9 *Levu*

18a Antennae elongate, flattened and compressed, elongate-oval in profile ..... 10 *Niphadodite*

19 Genae simple ..... 11 *Pyrrhoneura*

19a Genae with a small subrotundate, laminate appendage.... ..... 12 *Nesocore*

20 Antennae, subcylidric, granulations feeble....20 *Heronax*

20a Antennae more or less flattened, with very conspicuous granulations ..... (21)

21 Head not longer than the nota, lateral margins of vertex not sinuate .....21 *Nesophantasma*

21a Head longer than the nota, lateral margins of vertex sinuate ..... (22)

22 Head in profile only slightly ascendant, only slightly sinuate, broad ..... 22 *Phantasmatocera*

22a Head in profile curved and recurved, subascendant, narrow ..... 23 *Swezeyia*

23 Wings very little shorter than the tegmina, vertex elongate ..... 24 *Kuranda*

23a Tegmina twice as long as the wings, head comparatively short ..... (24)

24 Antennae cylindric; tegmina subparallel, apically subobliquely truncate .....25 *Zoraida*

24a Second segment of antennae deeply constricted near the apex (*); tegmina widening at the middle, apically subangulately rounded .....26 *Sikaiana*

Nisia.

1. *atrovenosus.*

Add: Fiji, Rewa (March-Apr., M.), Ba (Jan., M.), Navua (Feb., M.). Melichar has also recorded it from Abyssinia, Haro-Bussar (1904 Verh. Zool. bot. Ges. Wien LIV 34) and Distant from the Indian mainland (Faun. Ind. Rh. III, 309, fig. 150).

Suva.

The tegminal venation is very similar to that of *Nisia,* but there are two obliquely transverse veins in the subcostal cell (in the apical half), the median apical vein is forked (though this would probably vary in a long series, as it does in *Nisia*), and the lower apical part of the tegmen is more venose, more as in *Kermesia.* The head is depicted on Pl. IX, figs. 14-16.

* Distant erroneously treats this as two segments.

Basileocephalus.

Basileocephalus Kirkaldy.
=*Urabunna* Distant 1907, op. c., 414.

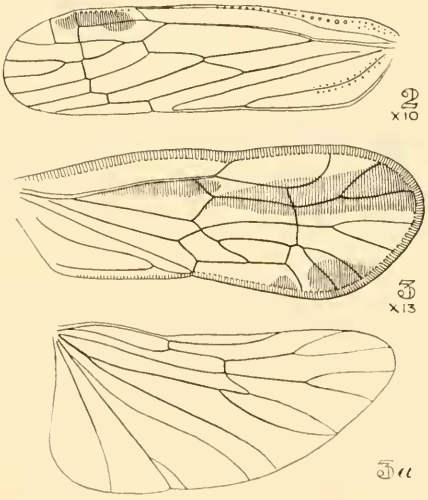
The care with which Mr. Distant has really studied my descriptions, is shown by his appreciation of my genus *Basileocephalus.* Although I specially remarked on the curious laminate recurved lateral margins of the pronotum, Mr. Distant supposes that this genus is closely allied to his *Sikaiana,* in which the pronotum bears no conceivable resemblance to such a description, while the latter fits that of his *Urabunna.* Mr. Distant has neglected to notice the sensory organs on the vertex and the granulated anal vein of the clavus, though the latter character has been noticed and included by his acute artist.

1. *thaumatonotus.*

Pl. IX, figs. 9-11, and Pl. XIX, fig. 20.

B. thaumatonotus Kirkaldy.
=*U. lineata* Distant, l. c., fig. 7.

I imagine Distant's species to be a synonym of the above, but he does not mention that the tegminal veins are noticeably coral-red.



Phaciocephalus.

I inadvertently placed this genus among those with the last segment of the labium fairly long; it is, however, subannuliform.

The venation of the tegmen and wing is shown in the text figure attached (No. 3).

The six species, all Fijian, are separable as follows:

1 Tegmina with red or orange markings.....(2)
1a Tegmina not marked with red or orange.....(3)
2 Inner half of tegmen reddish with 2 long yellowish spots on the margin; tegmen not at all smoky.....4 *miltodias*
2a Inner half of tegmen reddish, the inner margin creamy (sometimes interrupted by the ground colour close to the apex of the clavus), this inner half largely smoky, especially apically .....3 *nesodreptias*
3 Tegmen creamy with a greyish brown longitudinal stripe (4)
3a Tegmina whitish with the veins greyish-black and broadly marked ..... 6 *minyrias*
3b Tegmina pitchy, subcostal cell yellowish white..... *pullatus*
4 Tegmen with the greyish black stripe not connected with the commisure by a dark cross-streak.....1 *vitiensis*
4a Tegmen with the dark stripe connected with the commisure by a dark cross streak ..... *nesogonias*

1. *vitiensis.*

Pl. XIX, figs. 12-14.*

Mr. Muir has taken specimens (measuring up to 6 mill. long) in Fiji, Suva (No. 110), arboreal.

2. *nesogonias*, sp. nov.

Head and pronotum creamy, a little darker laterally. Scutellum dark blackish-brown, sometimes paler medianly. Tegmina milky, a broad, blackish-brown stripe down the tegmen, forking close to the base, also broadly touching the sutural margin at the middle and at the apical part. Wings milky, veins dark. Legs pale, apices of segments blackish.

Length 5 mill.

Hab. Fiji, Rewa, (Mar., Apr., Nov., Muir).

3. *nesodreptias* sp. nov.

Head and middle fourth (longitudinally) of pronotum, legs, sternites, &c., yellowish white, sterna tinged with orange. Rest of pronotum and the scutellum orange-red. Tegmina yellowish-

* On Pl. 19 f. 12, the sublateral keels of the vertex are not clearly shown.

white, with an orange-red stripe much as in *P. nesogonias,* the veins on this part being blood-red.

Length 5 mill.

Hab. Fiji, Rewa (Mar. & Nov., Muir).

Var: The orange on the tegmina narrower and bordered exteriorly with smoky, or almost replaced by it. Pronotum with two blackish-brown spots and scutellum with two to four anterolaterally. The orange hue may be crimson.

4. *miltodias* sp. nov.

Pl. XIX, fig. 20.

Whitish yellow, pronotum laterally, scutellum (except sometimes medianly), orange-sanguineous. Pattern of tegmina as in *P. nesogonias,* but the colouring different, the blackish being replaced by orange sanguineous. Legs yellowish-white, apices very narrowly dark.

Length 4-4½ mill.

Hab. Fiji, Rewa (Mar. & Apr, Muir No. 137), arboreal.

The sulcate median part of the vertex is not shown.

5. *pullatus* sp. nov.

Head and pronotum brownish-yellow; vertex sordid, lateral margins very narrowly dark fuscous. Scutellum piceous. Tegmina piceofuscous, basally opaque, subcostal cell (except basally) yellowish, apical margin very narrowly sanguineous. Wings smoky hyaline, veins dark. Forelegs dark fuscous, the others brownish-yellow.

Length 6 mill.

Hab. Fiji, Rewa (Mar. Muir's Nos. 128 and 132), aboreal.

6. *minyrias* sp. nov.

Head pale fuscous of various tints, pronotum whitish; sterna and legs soiled whitish; scutellum orange fuscous, with 3 large brown wedges. Tegmina milky, the veins thickly blackish-brown, except the whitish basal two thirds of the subcostal cell.

Length 5½ mill.

Hab. Fiji, Rewa (Apr.).

Thyrocephalus.

1. *leucopterus.*

Pl. XVIII, fig. 8.

(See also text fig. 2 on p. 166).

Lamenia.

In my last memoir, I placed this doubtingly among the Cixiinae; it should however, I think, be placed here, although somewhat aberrant.

Rhotana.

I now add a Fijian species, which may be distinguished from the Australian forms as follows:

1	Veins of tegmina pale yellow (*)	1 *chrysonoe*
1a	Veins sanguineous	(2)
2	Tegmina largely dark smoky	3 *haematoneura*
2a	Tegmina hyaline	3 *halosydne*

3. *halosydne* sp. nov.

Similar in structure to the two previous species. Whitish testaceous. Eyes brownish. Tegmina hyaline testaceous, immaculate, veins on basal fourth pale, on the rest bright sanguineous. Wings hyaline, veins sanguineous.

Length 5⅛ mill.

Hab. Fiji,, Rewa (Apr.. M.).

* Since this was in proof, Distant has published descriptions of five species as new, all apparently allied to *chrysonoe*, but as the length of the head is not stated, they cannot be determined without seeing the types. They are as follows:

ramentosa p. 409, *transversa*, p. 410, *opalina*, p. 410, *septemmaculata* p. 410, and *quadrimaculata* p. 411.

Levu.

1. *vitiensis.*

Add: Fiji, Rewa (Mar., Apr., Dec., M.).

Niphadodite, gen. nov.

Allied to *Pyrrhoneura* but differs by the form of the antennae. Also somewhat similar to *Heronax*, but differs by the form of the antennae.

Lateral margins of vertex widely separated at the base, converging anteriorly, forming an acute angle. Frontal keels almost contiguous throughout, except just at their apices. *Clypeus basally wide,* extending laterally as far as, or farther than, the outside part of the antennal insertion. Antennae elongate, extending nearly as far as the head anteriorly, flattened and compressed, elongate oval in profile; head in profile extending anteriorly nearly twice as far as an eye's length. Tegmina not unlike those of *Heronax*, but obtuse-angularly produced beyond the clavus, somewhat as in *Lyricen*. Type *insulicola*.

1. *insulicola* sp. nov.

Yellowish-testaceous, paler beneath. Eyes greyish-black. Last segment of labium and the metanotum greyish fuscous. Tegmina subhyaline, yellowish testaceous, veins in part tinged with pale oranged. Apical cells partly faint smoky, and a few scattered fuscous spots on the rest of the tegmina. Labium reaching to about the middle of the abdomen.

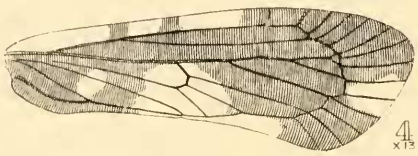
Length 7½ mill.

Hab. Viti Levu, (Mar. Muir's No. 130), arboreal.

Pyrrhoneura.

Pyrrhoneura Kirkaldy 1906.
Makula Distant, op c., 408.

1. *saccharicida.*



(fig. annexed, of tegmen, No. 4).

Add: Fiji, Rewa (Mar., Apr., Nov., Dec., Muir's No. 48) "common on certain native trees in the Bush and at times very common on Sugar Cane, turning the leaves yellow in streaks where they feed."

The stridulatory area is figured on Pl. XX, figs. 6-7.

2. *citharista* sp. nov.

The lateral margins of the vertex are rather more widely reflexed than in the type species. Testaceous, posterior angle of scutellum brown, genae partly suffusedly with rosy. Tegmina cinereotestaceous, veins concolorous, two transverse bands of grey-brown, at their base and on the basal third, the latter dividing into two at the radial vein, the lower branch (which is actually a spot on the subcostal cell) curving apical-wards and dividing into two bands which proceed irregularly to the apical parts of the tegmen. Wings hyaline, veins partly fuscous, a longitudinal fuscous stripe on the apical third near the middle.

Length 5 mill. to apex of closed tegmina.

Hab. Fiji, (March, Muir's No. 106,) arboreal.

The stridulatory area is figured on Pl. XX, figs. 1-2.

3. *ornata*.

Makula ornata Distant, l. c., fig. 5.

Hab. Queensland.

This differs from the preceding two species by having apparently a few more veins at the lower apical part, and usually in the Vitian forms, there is a cross vein in the first wing cell, but this is sometimes absent in *P. citharista*. The eyes are also a little farther from the dorsal margin of the genae in *P. ornata*.

Nesoncura subgenus nov.

Close to typical *Pyrrhoncura*, but the eyes are placed more as in *P. ornata* and the head in profile is subangulate anteriorly, while it is distinctly more elongate dorsally, being medianly extended farther in front of the eyes than with them.

4. *viticnsis* sp. nov.

Testaceous; the eyes and a small spot on each frontal keel at its base and the same at its apex, sides of pronotum narrowly, basal half of subcostal cell, blackish. Tegminal veins white, an ob-

lique, very obtusely angulate, band across the outer half of the apical half, part of the apical margin apical of the claval apex, and some obscure elongate spots more in the centre of the tegmen, fuscous.

Length 4¾ mill. to apex of closed tegmina.

Hab. Viti Levu, Rewa (Apr., M.).

Nesocore, gen. nov.

Superficially somewhat like *Phaciocephalus* but the antennae are more elongate, obliquely subtruncate apically, and the lateral keels of the frons continue sharply to the apical margin.

From *Pyrrhoneura* it differs (as also from other genera) principally by the possession of what appears to be a small, subrotundate laminate appendix to the genae, on each side, roughly at right angles to the genae themselves.

1. *fidicina* sp. nov.

Testaceous; the vertex with a pink tinge, lateral margins of frontal keels dark at least basally; lateral margins of nota, the abdomen above basally, &c., pale fuscous. Genal lamina milky white. Tegmina hyaline, a pale fuscous streak along the interior half, a conspicuous blackish speck near the apex, apical margin narrowly dark, part of some of the veins near the apex sanguineous. Wings milky hyaline, some of the veins fuscous.

Length 6 mill.

Hab. Viti Levu, Rewa (Mar., Apr., Muir's Nos. 151-4), under bark of an old tree much attacked by fungus.

Nymphs dark fuscous, the legs and sensory organs paler.

(Pl. XVIII, figs. 9-10).

Vivaha.

Vivaha Distant 1906 Faun. Ind. Rhynch. III 395, fig. 148.

1. *saniosa.*

V. saniosa Dist., 1907 A. M. N. H. (7) XIX 405.

Hab. Queensland.

Lyricen, gen. nov.

Vertex elongate, narrow, well produced in front of the eyes, posterior margin scarcely posterior to the anterior margin of the

eyes, apically narrowly truncate, longitudinally impressed, keeled medianly somewhat feebly; the head not impressed at the junction of vertex and frons and so separating them. Frons elongate, longitudinally impressed, basally constricted, apically truncate. Antennae short, subcylindric, subbifid apically, surrounded by a lobe of the pronotum. Pronotum deeply angulately emarginate in the middle; scutellum elongate, diamond-shaped. Tegmina elongate, apically ampliated and rounded.

1. *imthurni* sp. nov.

Pls. XIX, figs. 1-3 and Pl. XX, figs. 3-5.

Fuscous, grading to blackish in parts especially on the basal two-thirds of the scutellum; keels, foliaceous part of pronotum, &c., pale brownish-yellow. Scutellum with a yellowish line down the middle, broadening a little at the posterior angle. Legs testaceous, fore and middle femora faintly fuscous apically, hind femora faintly fuscous, annulated with testaceous; fore and middle tibiae fuscous apically. Abdomen dark fuscous, marked with sanguineous and testaceous. Tegmina cinereo-testaceous, veins concolorous, margined irregularly with fuscous, some of the apical cells mostly fuscous, apical margin very narrowly blood-red.

Length of body 4 mill., to apex of tegmina 9 mill., widest breadth of tegmen 5 mill., narrowest about 3 mill.

Hab. Viti Levu, Rewa (Mar., Apr., Nov., M.).

The male genitalia are figured on Pl. XIX, figs. 1-3.

In accordance with a request from Mr. Muir, I name this interesting form after His Excellency Sir E. F. im Thurn, Governor of Fiji, a zealous naturalist and well known traveller, who afforded Mr. Muir great facilities and showed him much kindness during his researches in the Fiji Isles.

Proutista.

Proutista Kirkaldy 1906 Entom. XXXVII 279.

=||*Assamia* Buckton 1896 Ind. Mus. Notes W. p. 1.

=*Sardis* Kirkaldy 1906 Bull. Ent. H. S. P. A. I 426.

=*Phenice* Distant 1906 Fam. Ind., Rh. III 295 (not Westwood).

Distant cites *fritillaris* (Boh.) as the type of *Phenice*, but the true type is *fasciolata* (Boh.). I am aware that Westwood considered that the first species in a genus should as a rule be the

type, but he explicity stated that this was only the case when other reasons were absent (*). Now, *Derbe fritillaris* Boh. is the first species described, but *D. fasciolata* is figured and the *figures taken as the basis of the generic description.* I therefore maintain that *fasciolata* is the type of *Phenice* and it certainly not a *Phenice* in a Distantian sense.

1. *lumholtzi* Kirkaldy.

Pl. XIX, figs. 6-8.

Sardis maculosa Kirkaldy 1906 Pl. 28, figs. 4-6 (not *Phenice maculosa* Krueger)**

Proutista lumholtzi Kirkaldy 1907 A. S. E. Belg., LI, 126.

Head and pronotum testaceous, a speck at the base of the frons and another on the clypeus, and some suffusions apically on the pronotum, blackish brown. Mesonotum castaneous; a median keel, a rough W in the middle, and the hind margin medianly, testaceous. Metanotum dark, whitish medianly. Legs testaceous; fore coxae, apex of tibiae, &c., blackish. Abdomen testaceous and blackish confused. Tegmina hyaline, marked with blackish brown less closely than in *moesta.*

Length 7½, expanse of tegmina 15 mill.

Hab. Queensland, Cairns (Aug., P. & K.) on *Saccharum officinarum.*

The remarkable male genitalia are figured (Pl. XIX, figs. 6-8).

2. *australis.*

Phenice australis Distant, op. c., 397.

Hab. Queensland. Unknown to me.

Nesoniphas, gen. nov.

Vertex and pronotum raised and swollen vertically, the lateral margins of the vertex (as seen dorsally) rounded and apically produced linearly between and beyond the eyes which are very large. Frons linear, narrowly channelled medianly, widened and

* "I do not here insist upon the necessity of placing a typical species at the head of a genus .....but I do insist that where an author does not state the particular species which he regards as the type of his genus, we are bound to suppose that he would place it at the head of his genus." Westwood, April 1837 Mag. Nat. Hist. n. s., I, 170.

** Through the courtesy of Dr. Van Deventer, I have examined some Javanese examples of *Proutista moesta* (=*maculosa*), a species different from the Australian one. The stridulating area of *moesta* is figured on Pl. XX, figs. 8-9.

flattened apically. Antennae very short. In profile the head and pronotum are about equally raised but there is a deep cleft between the two down to their meeting place. Pronotum posteriorly emarginate in the middle, scutellum flat, not carinate.

1. *insignissima* sp. nov.

Pl. XIX, figs. 10-11.

Whitish testaceous, whiter above; frons margined with fuscous. Ocellus black. Eye dorsally with an interior black line which is continued on to the pronotum laterally. Tegmina milky hyaline, a dark fuscous line on the basal half of the subcostal vein, the tegmina also spotted elongately with greyish, veins white. Wings white, veins concolorous.

Length 5 mill.

Hab. Viti Levu, (Muir No. 55), Rewa Mar.-Dec.), on *Zingiber zerumbet* (wild ginger).

Philadelphcia.

1. *pandani.*

The male genitalia are figured Pl. XIX, fig. 9.

Muiria gen. nov.

Distinguished from other *Derbidae* by the rudimentary wings. Head and pronotum vertical, vertex very small, triangular, and produced linearly anteriorly, projecting well beyond anterior margin of eyes, the latter being subcontiguous at about half their length. Frons linear, acute. Antennae elongate, first segment subannulate but prominent, second four times as long as maximum width, about equal in length to the fore femora, obliquely truncate apically, the flagellum arising at the short end of the truncation. Pronotum very narrow, deeply emarginate angularly. Scutellum rather feebly tricarinate.

1. *stridula* sp. nov.

Pl. XIX, f. 4-5 and Pl. XX, figs. 10-13.

Sanguineous; legs and genital segments (in part) paler; antennae testaceous. Tegmina hyaline, veins pale fuscous, costal and subcostal veins, apical margin, &c., sanguineous.

Length of body 2 mill., to apex to tegmen 5½ mill.

Hab. Viti Levu, Rewa (Mar., Muir's No. 159), off a low, native palm.

I have much pleasure in naming this remarkable genus after my friend Mr. Muir. His interesting remarks on the stridulation will be found on p. 7.

Pl. XX, fig. 13 does not depict the vertex quite accurately being too broad basally and not excavated. The scutellum of the mesonotum should be represented as feebly tricarinate.

Heronax Kirkaldy.

=*Fennahala* Distant, op. c., 412.

1. *parnassius.*

H. parnassius Kirkaldy.
F. infuscata Dist., l. c., fig. 6.

I think this synonymy is correct.

2. *rubrinervis.*

F. rubrinervis Dist., op. c., 413.
Hab. Queensland, Cairns.

3. *saccharivora.*

H. saccharivora Kirkaldy.

4. *juno.*

F. juno Dist., l. c.
Hab. Queensland, Kuranda.

This is evidently very close to *saccharivora*, but the colouring, as mentioned by Distant, seems a little different.

5. *pallescens.*

F. pallescens Dist., l. c.
Hab. Queensland.

Phantasmatocera.

Phantasmatocera Kirkaldy.
=*Arunta Distant*, op. c., 406.

1. *arborea.*

P. arborea Kirkaldy.
A. rubrovenosa Distant, l. c., fig. 3.

Distant has led himself astray by not noticing that it was not the generic type that was figured, but a second species, which in fact is not congeneric.

Nesophantasma gen. nov.

Differs from *Phantasmatocera* by the shorter head, whose lateral margins are only slightly sinuate, and by other structures well seen in the respective figures; by the shorter antennae which do not reach in profile to the apex of the eyes; the tegmina more rounded at the apex, and the apical areas larger and less in number. Type *vitiensis.*

1. *vitiensis.*

Phantasmatocera vitiensis Kirk., Pl. XXVIII, figs. 1-3.

Szczeyia.

1. *lyricen.*

Pl. XIX, figs. 15-19.

Mr. Muir has taken this in Viti Levu, Rewa (March).

Kuranda.

Kuranda Dist., op. c., 407.

1. *notata.*

K. notata Dist., l. c., fig. 4.
Hab. Queensland.
Not unlike *Niphadodite* except that the antennae are very different.

Zoraida.

||*Thracia* Westwood 1841 A. M. N. H., VI 478.
Zoraida Kirkaldy 1900 Entom., 242.

Distant has described five species as belonging to this genus. from Queensland, viz.:—

1 *cycnoptera* p. 401.
2 *cupoecila*, p. 402.
3 *consanguinea*, l. c.
4 *cydista*, l. c.
5 *picta*, p. 403.

Sikaiana.

Sikaiana Distant, op. c., 399.

1. *nesiope* sp. nov.

Pl. XVIII, fig. 13 (tegmen).

Testaceous, eyes black. Antennae fuscous. Tegmina milky. two or three sanguineous specks on the costal margin, veins concolorous, very delicately marked with fuscous. Wings milky, veins concolorous, one or two fuscous specks.

Length 1½ mill to apex of body, 4¾ mill. to apex of tegmina.

Hab. Viti Levu, Rewa (Apr., Muir No. 167; 1 example in bad condition.

It seems close to *S. hyalinata* Dist. but it is smaller, the general hue of the venation is milky-white and the tegminal pattern is different. Distant has described two Australian species, *S. hyalinata* p. 399, fig. 1., and *S. maculosa*, l. c., Queensland.

DESCRIPTION OF PLATES.

Plate I.

1. *Cicadetta tympanistria.*
2. Male genitalia of the same, in profile.
3. Operculum of the same.
4. *Philagra parva*, wing, (a little diagrammatic).
5. *Polychactophyes serpulidia*, wing (do.).
6. *Dialectopteryx australica*, wing (the dotted lines show the restored parts).
7. The same, tegmen (do.).
8. *Astorga saccharicida*, nymph.
9. The same in profile.
10. *Muirella oxyomma*, nymph.
11. The same in profile.
12. Face of the same.
13. *Conosanus hospes*, nymph.
14. Long-winged adult of the same.
15. Short-winged adult.
16. Tegmen of long-winged form.
17. Tegmen of short-winged form.

Plate II.

1. *Idiocerus hylcorais*, vertex.
2. Face of the same.
3. *Nephotettix plebeius*, vertex &c.
4. Face of the same.
5. *N. curytus*, vertex &c.
6. Face of the same.
7. *Eurinoscopus lentiginosus*, vertex &c.
8. Face of the same.
9. *Driotura aristarche.*
10. Face of the same.
11. *Nephotettix apicalis*, tegmen.
13. Face of the same.
14. *Tharra* sp., nymph in profile.

15. Dorsal view of the same.
16. *T. nausikaa.*
17. Face of the same.
18. *Hybrasil brani,* vertex &c.
19. *Thymbris inachis,* female.
20. Face of the same.
21. *Muirella oxyomma.*
22. Face of the same.

Plate III.

1. *Siphanta acutipennis.*
2. *S. acuta.*
3. *S. toga.*
4. *S. acuta* (var.).

Plate IV.

1. *Siphanta sensilis.*
2. *S. granulicollis.*
3. *S. lucindae.*
4. *S. granulata.*

Plate V.

1. *Siphanta subgranulosa.*
2. *S. breviceps.*
3. *S. galeata.*
4. *Thanatochlamys tristis.*

Plate VI.

1. *Siphanta acutipennis,* vertex &c.
2. Face of the same.
3. *S. galeata,* vertex &c.
4. Face of the same.
5. *S. lucindae,* vertex &c.
6. Face of the same.
7. *S. granulicollis* (var.) vertex &c.
8. Face of the same.
9. *Thanatochlamys tristis,* vertex &c.
10. Face of the same.

11. *Siphanta granulicollis,* vertex &c.
(N. B.—The median keels are omitted).
12. *S. subgranulosa,* vertex &c.
13. *S. acuta,* the same.
14. Face of the same.
15. *S. sensilis,* vertex &c.
16. Face of the same.
17. *S. acuta,* last nymphal instar.
18. Face of the same.
19. The same in profile.
20. The same, egg-mass in situ.

Plate VII.

1. *Tylana acutipennis,* tegmen.
2. Vertex &c. of the same.
3. Face of the same.
4. *Phantiopsis australiaca.*
5. Vertex &c. of the same.
6. Face of the same.
7. Nymph of an unknown Fulgorine.
8. Face of the same.
9. *Apsadaropteryx elongatulus.*
10. Face of the same.
11. *Siphanta toga,* vertex &c.
12. *Chlamydopteryx ridicularius,* vertex &c.
13. Face of the same.
14. Tegmen of the same.
15. *C. vulturnus.*
16. Face of the same.
17. *Phacopteryx sidnicus,* nymph.
18. Face of the same.
19. The same in profile.
20. The same, adult.
21. Face of the same.

Plate VIII.

1. *Leptochlamys compressa,* vertex &c.
2. Face of the same.
3. *Peltodictya kurandae*

4. Face of the same.
5. *Oliarus felis*, vertex &c.
6. Face of the same.
7. *O. lubra*, vertex &c.
8. Face of the same.
9. Tegmen of the same.
10. *O. phelia*, vertex &c.
11. Face of the same.
12. Tegmen of the same.
13. *Solonaima solonaima*, vertex &c.
14. Face of the same.
15. Tegmen of the same.
16. *Australoma austrina*, vertex &c.
17. Face of the same.
18. Tegmen of the same.
19. *Leirioessa tortricomorpha*, vertex &c.
20. Face of the same.
21. Tegmen of the same.

Plate IX.

1. *Aristyllis omphale*, vertex &c.
2. Face of the same.
3. *A. aristyllis*, vertex &c.
4. Face of the same.
5. *A. adippe*, vertex &c.
6. Face of the same.
7. *Eurynomeus australiae*, vertex &c.
8. Face of the same.
9. *Basilcocephalus thaumatonotus*, vertex &c.
10. Face of the same.
11. The same in profile.
12. *Rhinodictya quaesitrix*.
13. Face of the same.
14. *Suva koebelei*, vertex &c.
15. Face of the same.
16. The same in profile.
17. *Callinesia pulchra*.
18. *Francesca saleminophila*.
19. Face of the same.
20. *Callichlamys muiri*.
21. Face of the same.

Plate X.

1. *Delphax anemonias,* vertex &c.
2. Face of the same.
3. *D. eupompe,* vertex &c.
4. Face of the same.
5. *Megamelus proserpina,* vertex &c.
6. Tegmen of the same.
7. Aberrantly veined tegmen of the same.
8. *M. sponsa,* vertex &c.
9. Face of the same.
10. *Delphax parysatis.*
11. Face of the same.
12. *D. thyestes.*
13. Face of the same.
14. *Peregrinus maidis.*
15. *D. albotristriatus.*
16. D. *algebra.*
17. Face of the same.
18. *D. dilpa* (N. B.—The vertex is too much produced).
19. Face of the same.
20. *D. astyanax.*

Plate XI.

1. *Stenocranus agamopsyche.* vertex &c.
2. Face of the same.
3. Face of the same, nymphal instar.
4. Nymph of the same.
5. *Perkinsiella saccharicida,* face.
6. Profile of the same.
7. Antenna of the same.
8. Hind tibial and tarsus of the same.
9. *Dicranotropis koebelei,* face.
10. Hind tibia and tarsus of the same.
11. *Anectopia mandane,* brachypterous form.
12. Face of the same.
13. Profile of the same.
14. *Dicranotropis pseudomaidis.*
15. Nymph of the same.
16. Face of the same.
17. *Anectopia mandane,* macropterous form.

18. Hind tibia and tarsus of *Tetigonia parthaon.*
19. The same of *Eurymelias hyacinthus.*
20. The same of *Philagra parva.*

Plate XII.

1. *Tropidocephala dryas,* vertex &c.
2. Face of the same.
3. The same in profile.
4. Hind leg of the same.
5. *T. eximius,* vertex &c.
6. Face of the same.
7. The same in profile.
8. *Haplodelphax iuncicola,* vertex &c.
9. Face of the same.
10. *Hadeodelphax pluto,* vertex &c.
11. Face of the same.
12. *Perkinsiella vastatrix,* male pygophor (end on).
13. The same (three-quarter view).
14. *P. sinensis,* the same (end on).
15. The same (three-quarter view).
16. *Delphax eupompe,* the same (end on).
17. The same (three-quarter view).
18. The same in profile.
19. *Megamelus proserpina,* the same (end on).
20. The same (three- quarter view).
21. The same in profile.

Plate XIII.

Male pygophors of Asiracidae, in two or three views.

1-3. *Perkinsiella pseudomaidis.*
4-6. *Dicranotropis muiri.*
7-8. *Peregrinus maidis.*
9-10. *Perkinsiella vitiensis.*
11-13. *P. saccharicida.*
14-5. *P. graminicida.*

Plate XIV.

The same as the preceding:

1-3. *Delphax albotristriatus.*
4-6. *Anectopia mandane.*

7-9. *Megamelus persephone.*
10-12. *Delphax albicollis.*
13-15. *D. astyanax.*

Plate XV.

The same as the preceding:

1-3. *Delphax puella.*
4-5. *Stenocranus pacificus.*
6-8. *Purohita arundinacea.*
9-11. *Delphax kolophon.*
12-14. *D. pylaon.*
15-16. *D. algebra.*

Plate XVI.

The same as the preceding:

1-2. *Delphax anemonias.*
3. *D. geranor.*
4-5. *D. matanitu.*
6-7. *D. dilpa.*
8-9. *D. kaha.*
10-11. *D. ostorius.*
12-13. *D.dryope.*
14-15. *Smicrotatodelphax perkinsi.*

Plate XVII.

Of the same nature as the preceding.

1-3. *Gelastodelphax histrionicus.*
4-5. *Tropidocephala dryas.*
6-7. *Stenocranus agamopsyche.*
8-9. *Dicranotropis koebelei.*
10-11. *Hadeodelphax persephone.*
12. *H. pluto.*
13-14. *Melanesia pacifica.*
15-6. *Tropidocephala eximius.*

Plate XVIII.

1-3. *Delphax lazulis,* male pygopher.
4. *D. disonymos,* the same.
5. *Lyricen imthurni,* profile.
6. Head and nota of the same.

7. Face of the same.
8. *Thyrocephalus leucopterus,* tegmen.
9. *Nesocore fidicina,* nymph.
10. Face of the same.
11. *Proterosydne arborea.*
12. Face of the same.
13. *Sikaiana nesiope,* tegmen.
14. *Smicrotatodelphax perkinsi.*
15. *Delphax matanitu.*
16. *Gelastodelphax histrionicus.*

Plate XIX.

1-3. *Lyricen imthurni,* male genitalia.
4-5. *Muiria stridula,* the same.
6-8. *Prontista lumholtzi,* the female genitalia.
9. *Philadelphcia pandani,* the male genitalia
10. *Nesoniphas insignissima* head and nota.
11. The same in profile.
12. *Phaciocephalus vitiensis,* head &c.
13. Profile of the same.
14. Face of the same.
15. *Swezeyia lyricen,* head and nota.
16. Face of the same.
17. The same in profile.
18. Antenna.
19. The same enlarged.
20. *Phaciocephalus miltodias*

Plate XX.

1. *Pyrrhoneura citharista,* wing.
2. The same, stridulatory area.
3. *Lyricen imthurni,* wing.
4. Stridulatory area of the same.
5. Variant venation of No. 3.
6. *Pyrrhoneura saccharicida,* wing.
7. Stridulatory area of the same.
8. *Proutista moesta,* wing.
9. Stridulatory area of the same.
10. *Muiria stridula,* profile.
11. Base of flight organs in same.
12. Wing of same.
13. Dorsal view of same.

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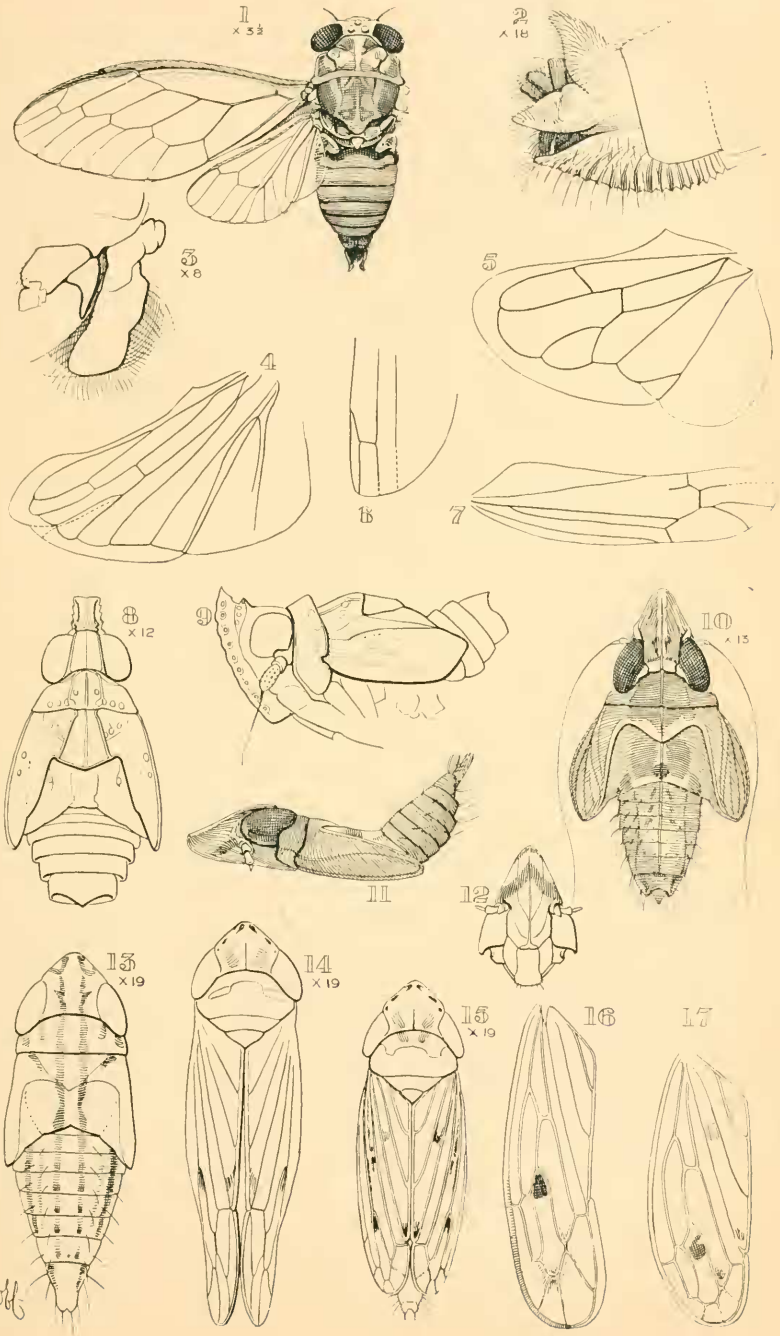

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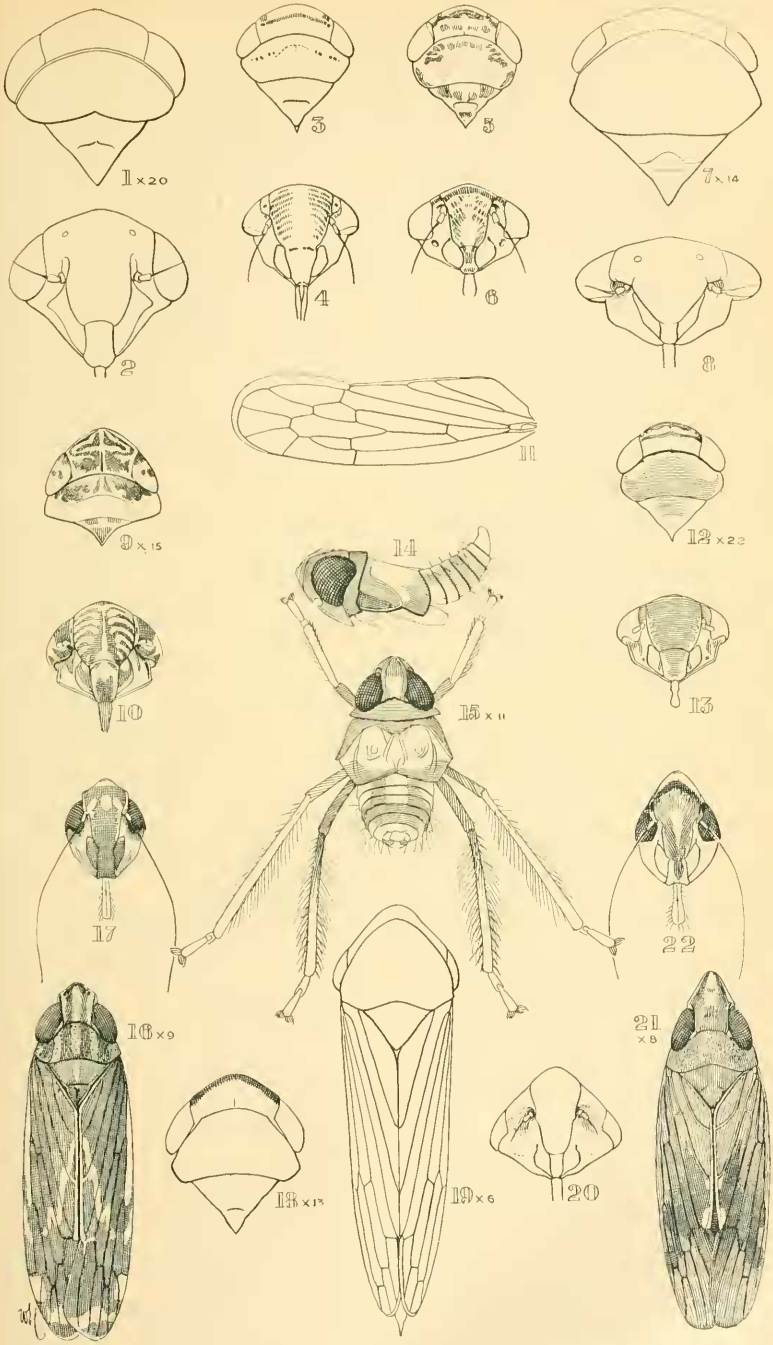
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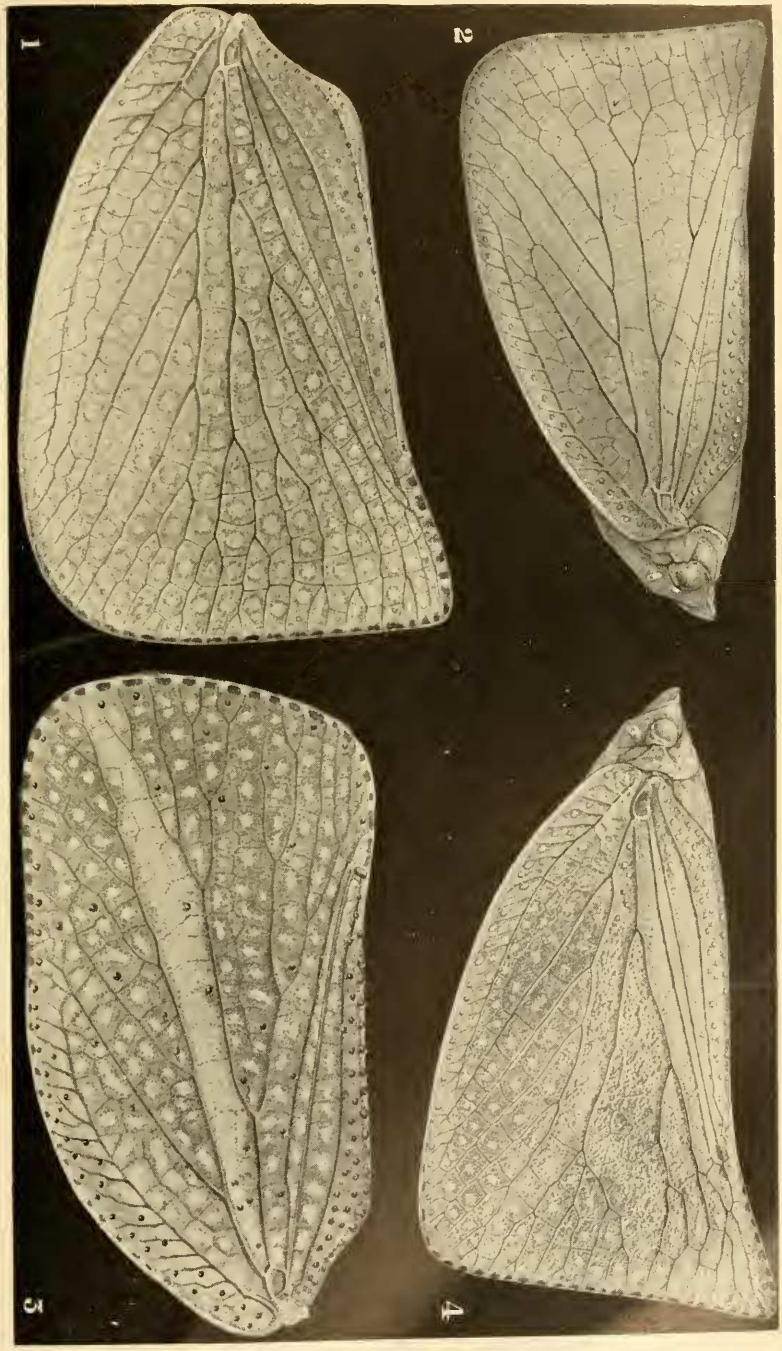

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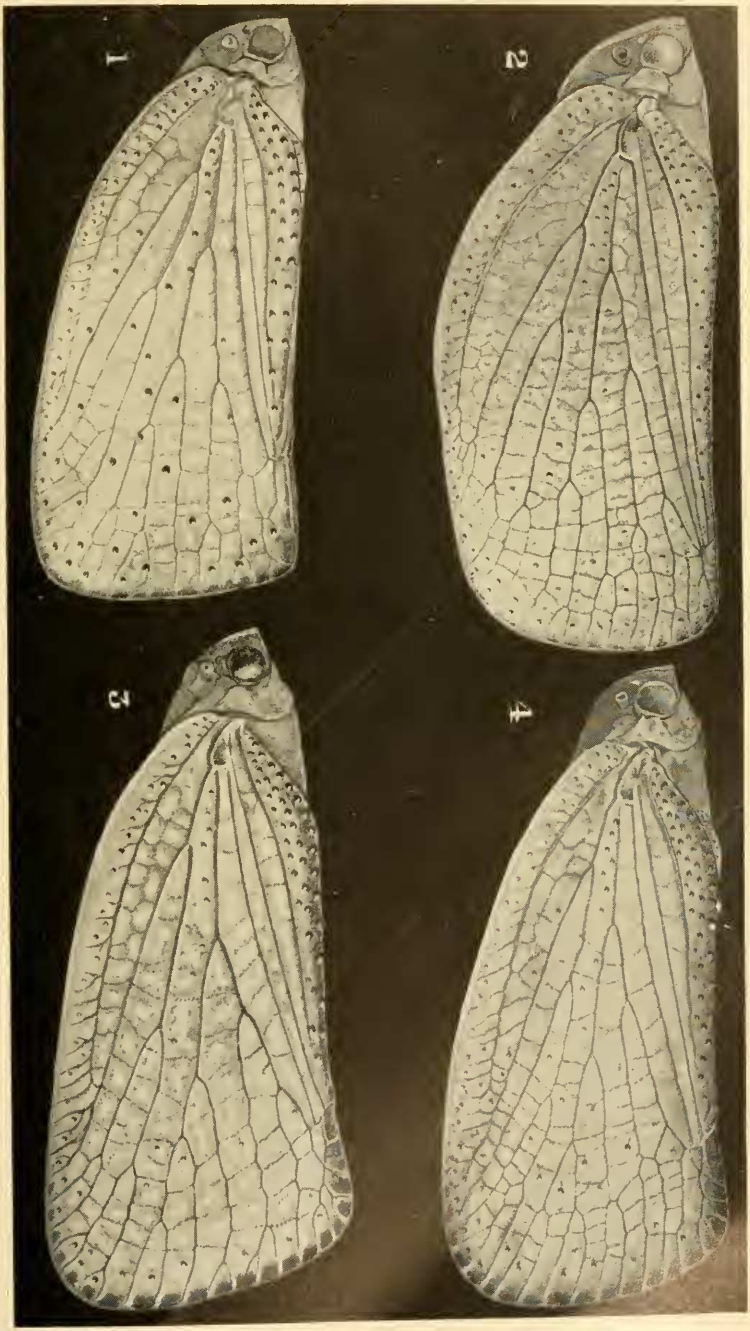

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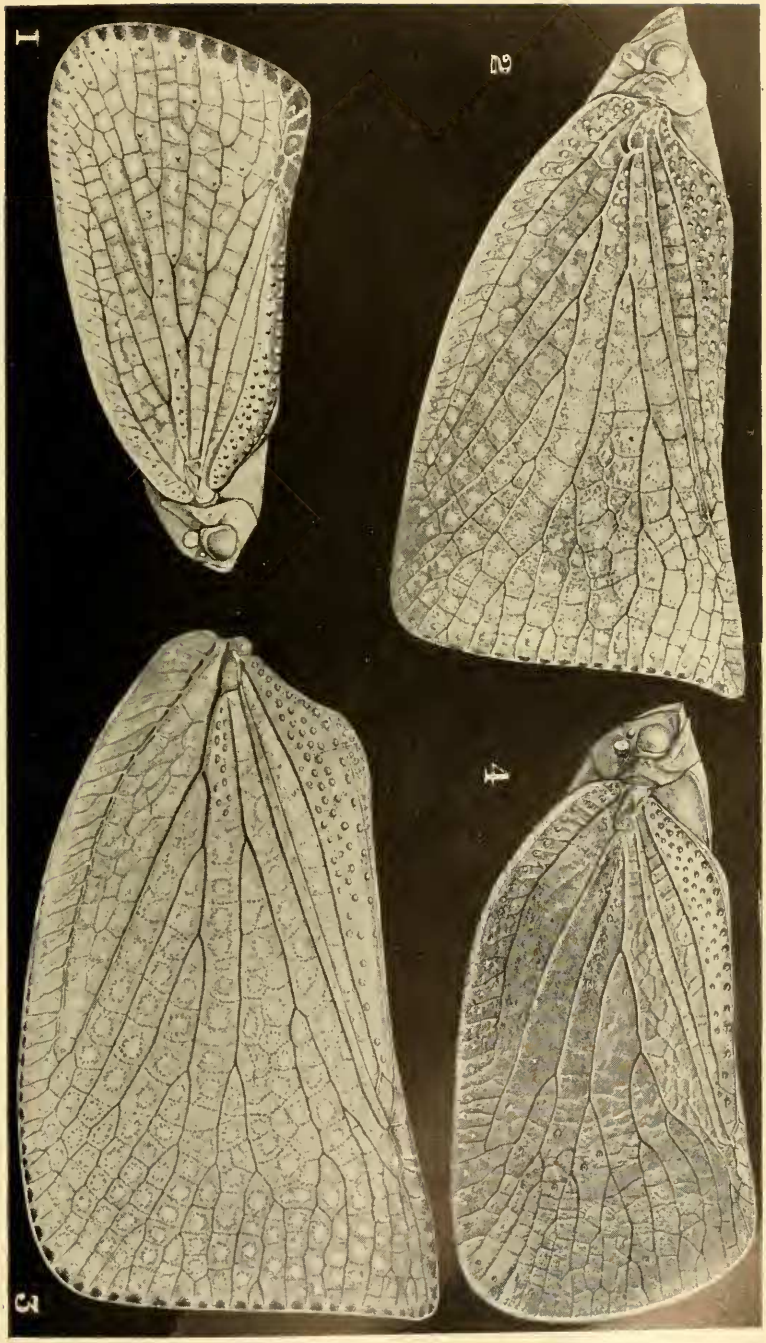

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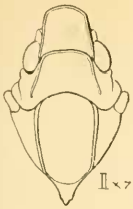
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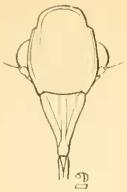
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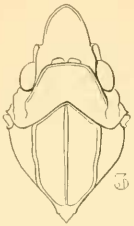
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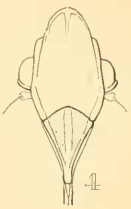
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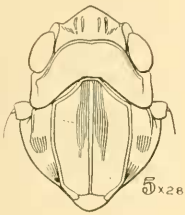
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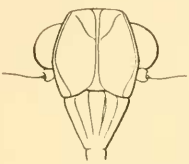
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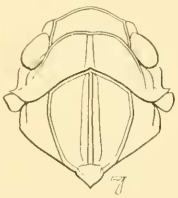
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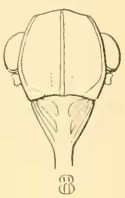
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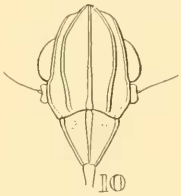
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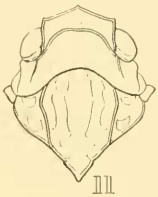
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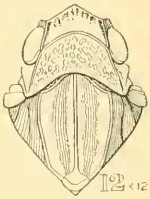
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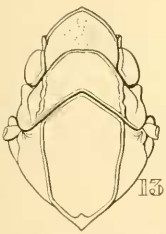
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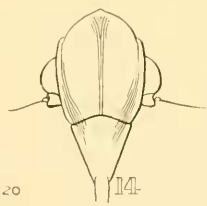
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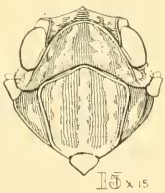
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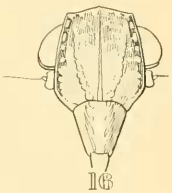
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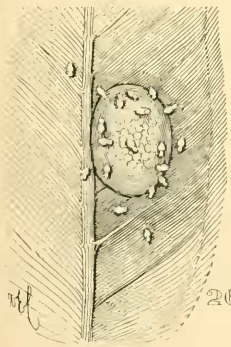
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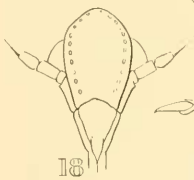
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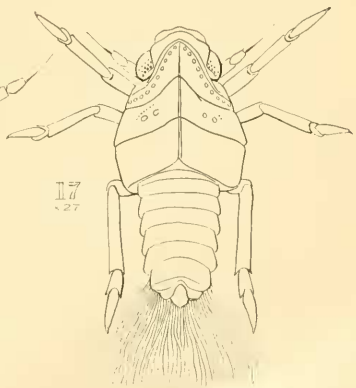
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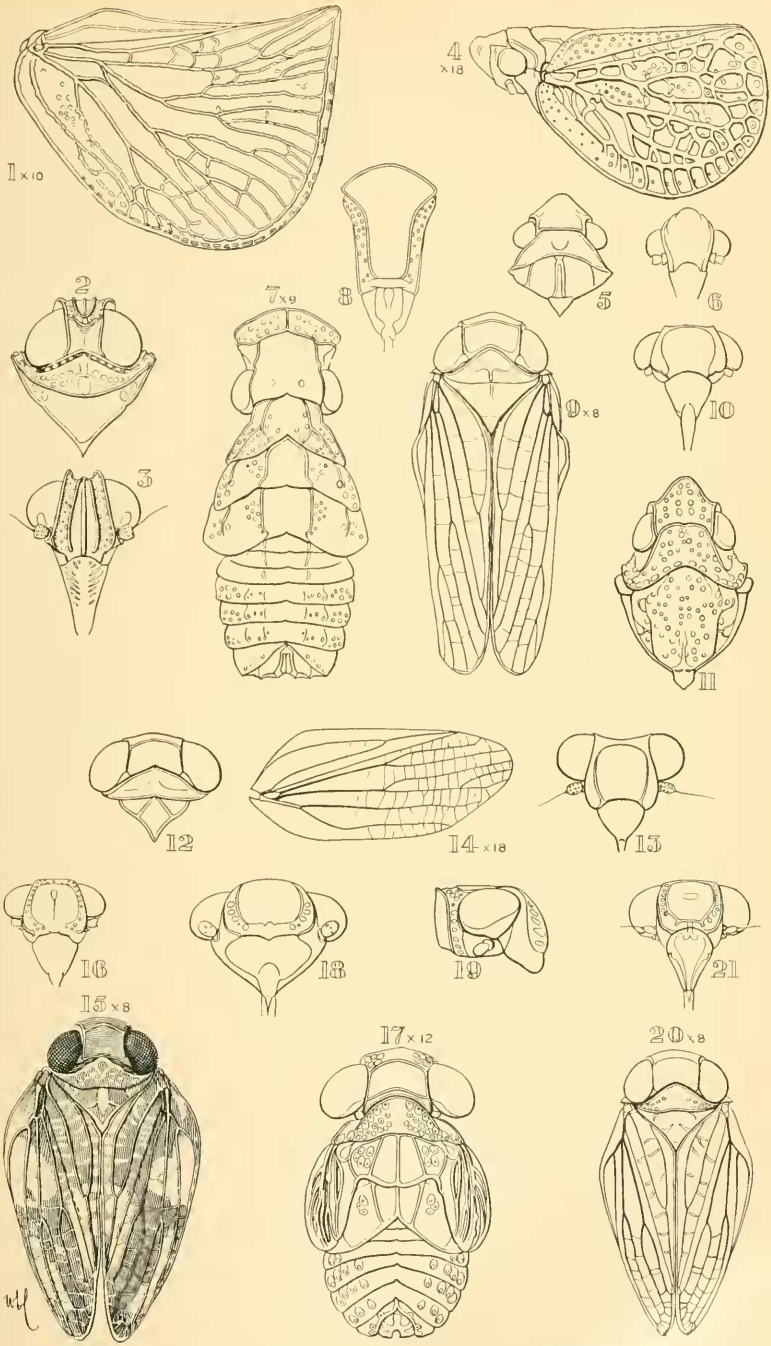

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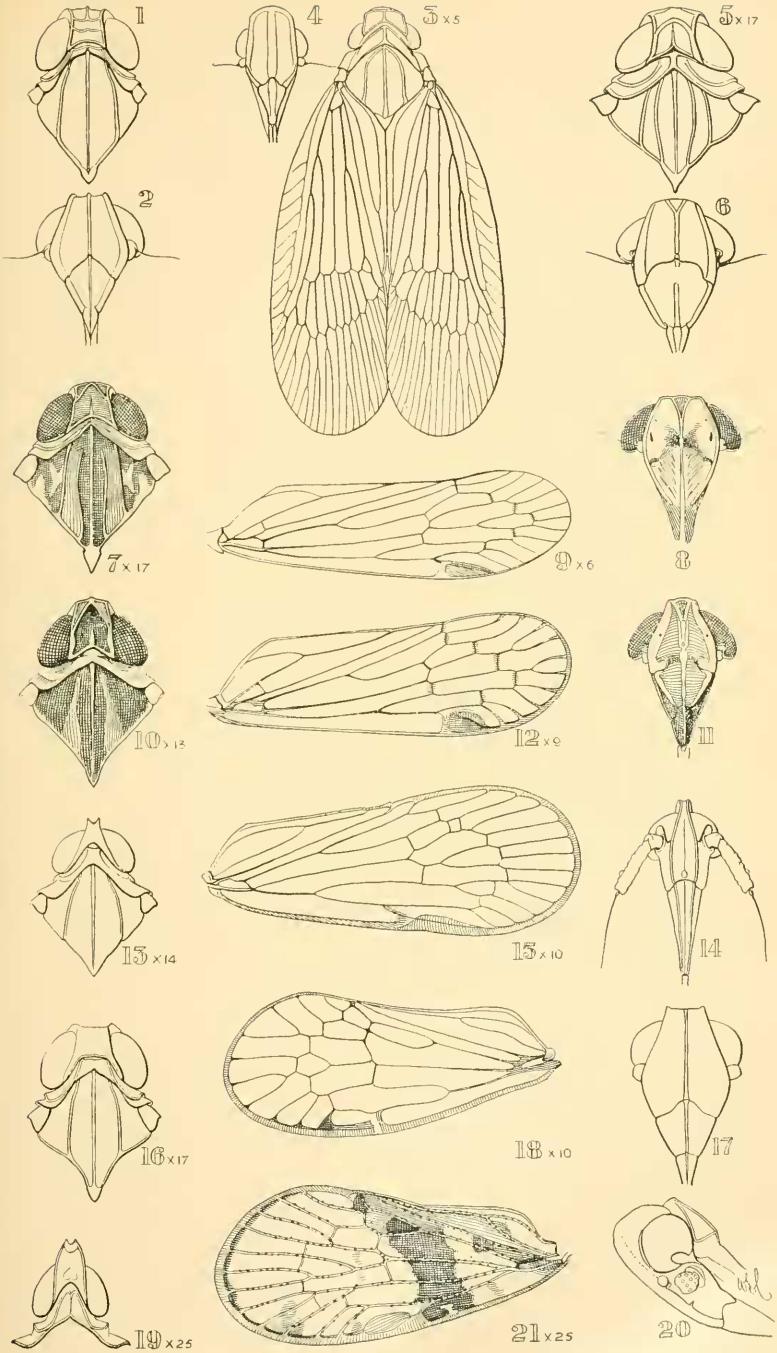
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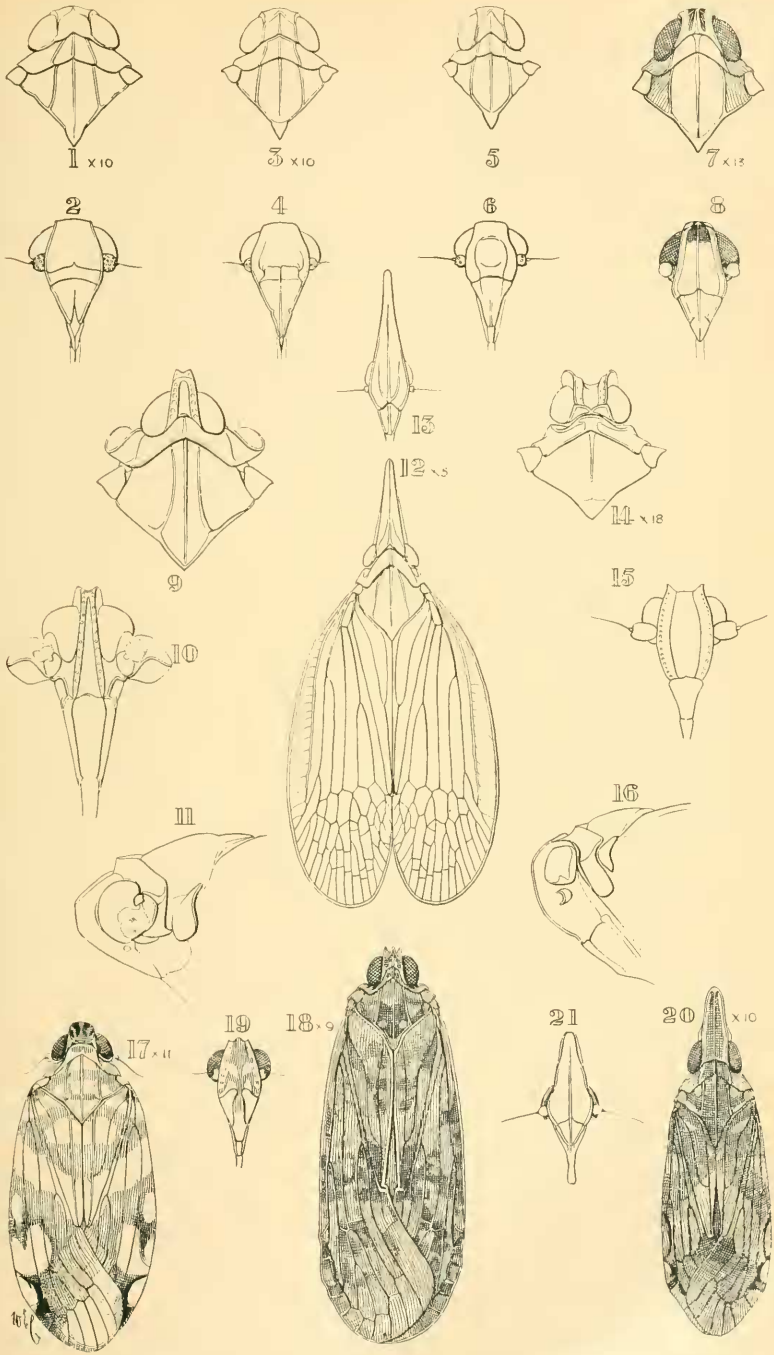
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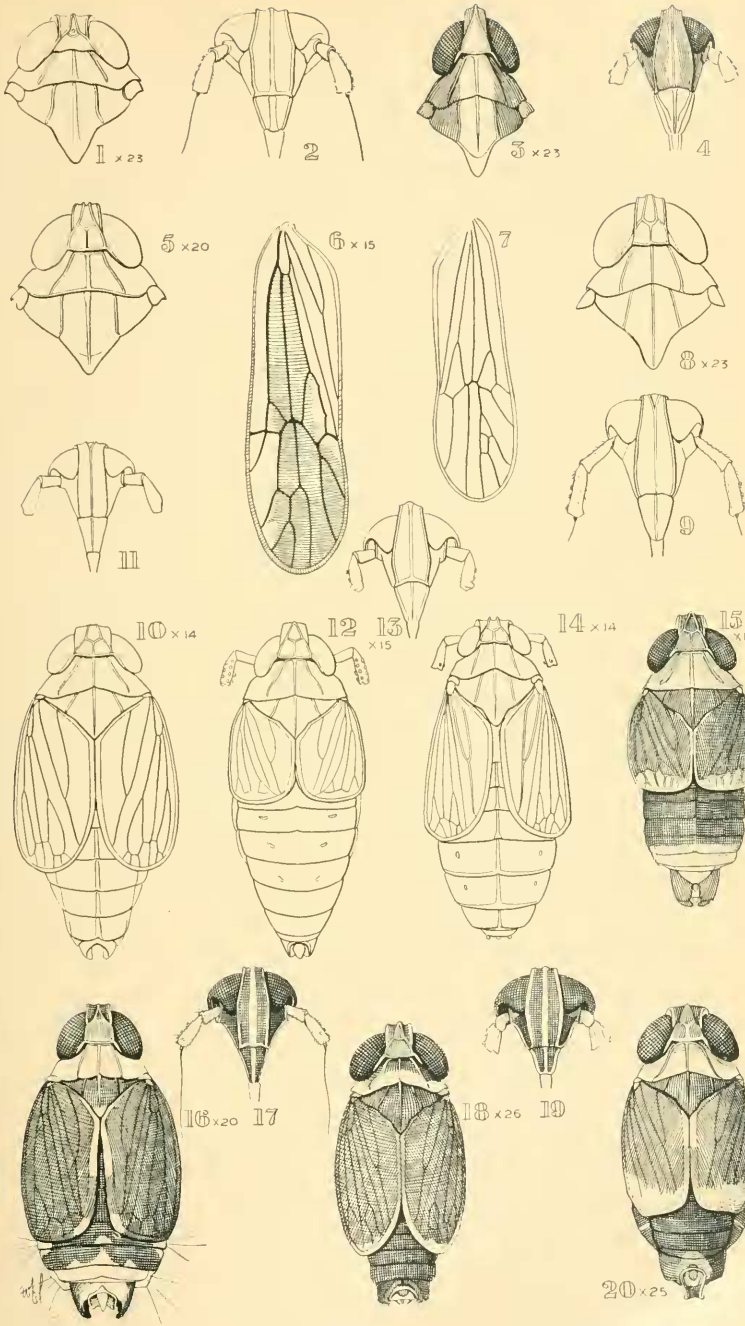
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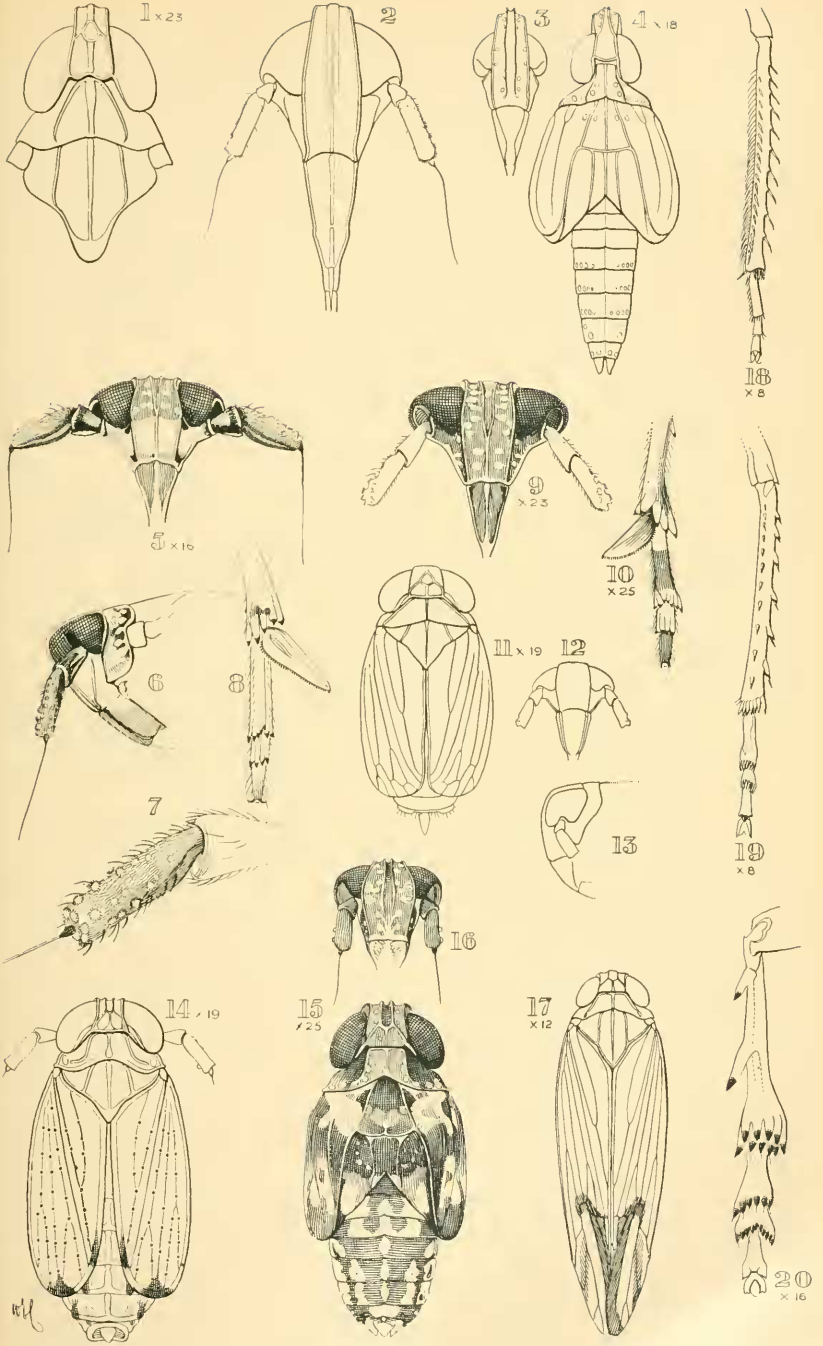
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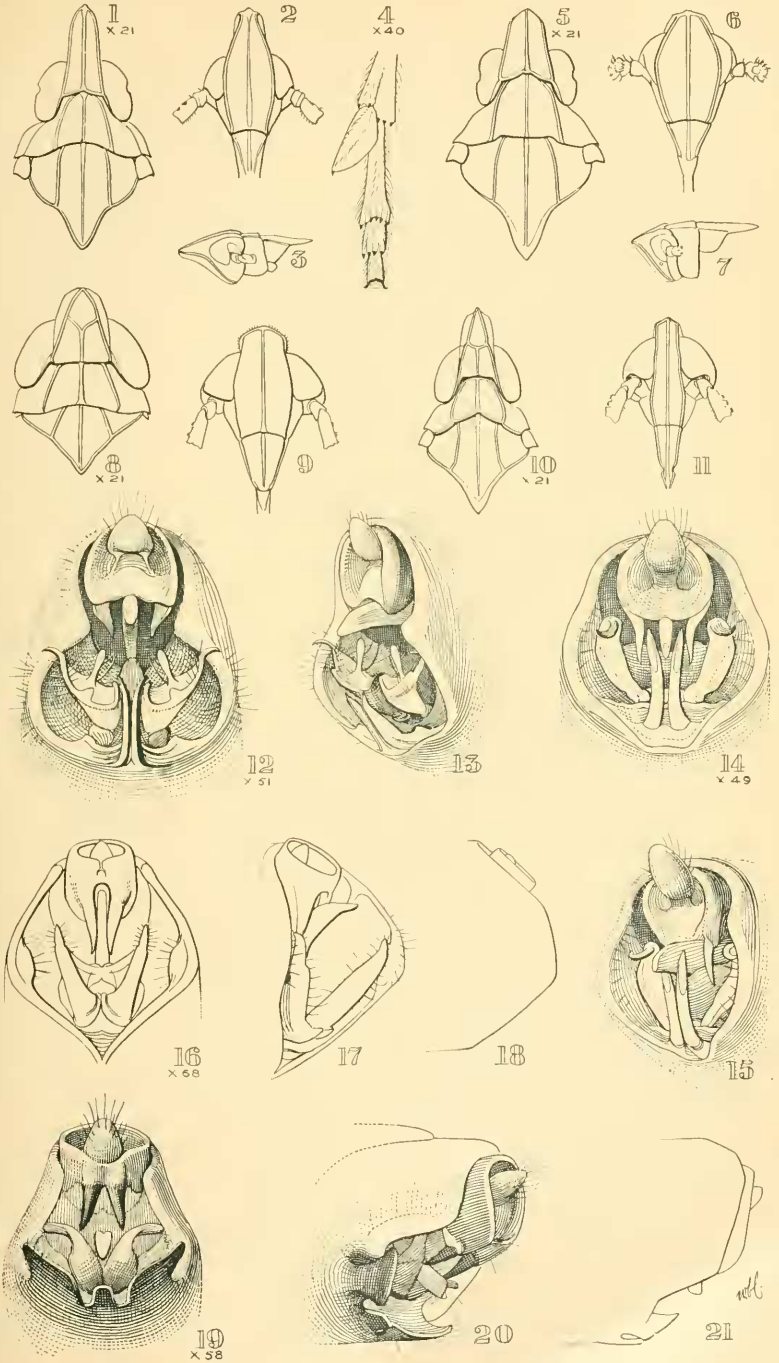
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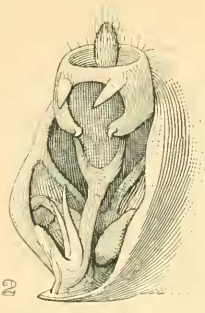
PLATE XII.


1 x58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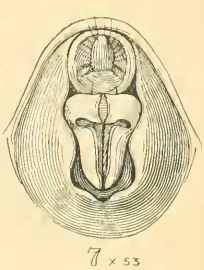
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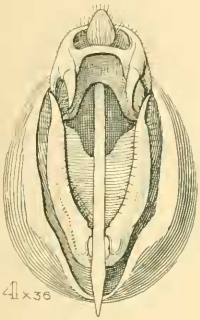
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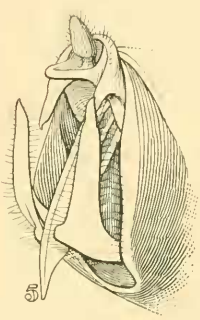
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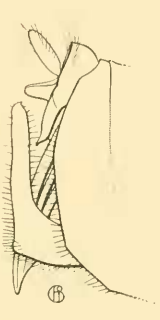
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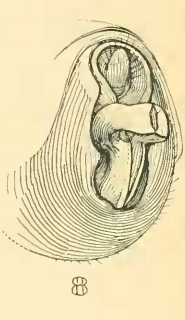
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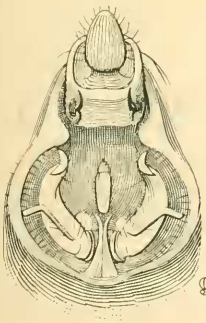
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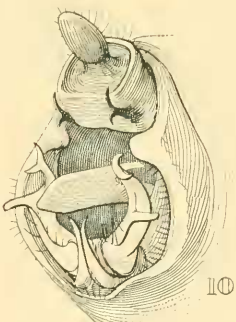
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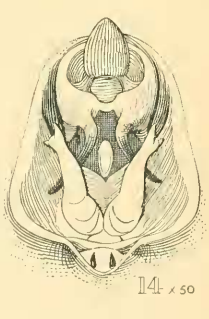
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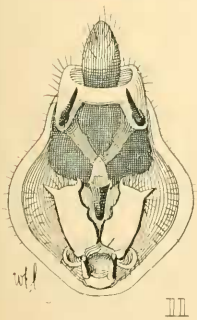
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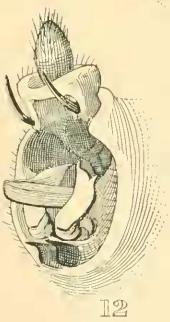
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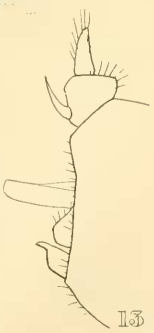
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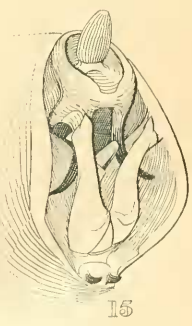
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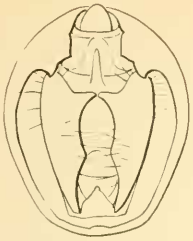
PLATE XIII.



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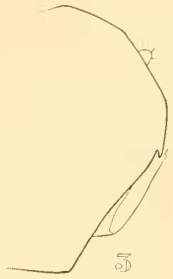

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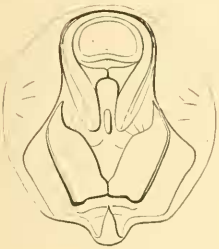

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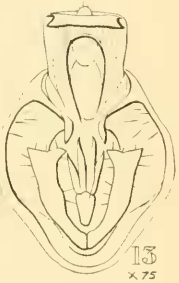

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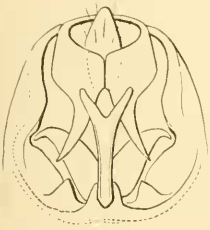

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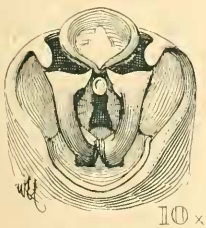

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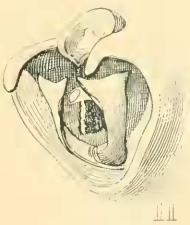

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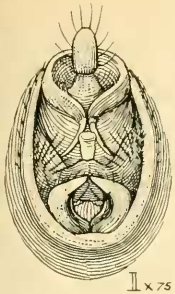
PLATE XIV.



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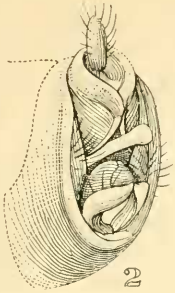

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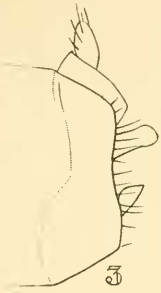

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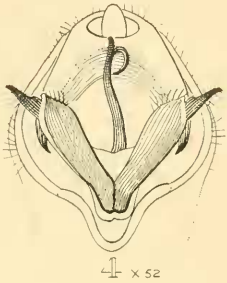

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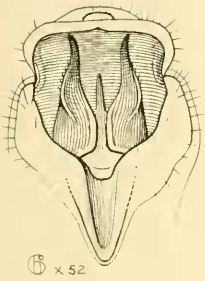

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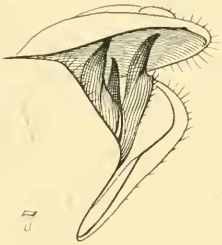

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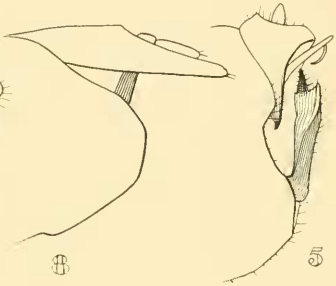

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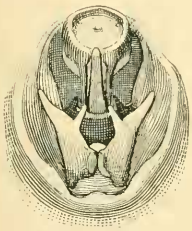

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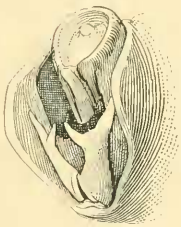

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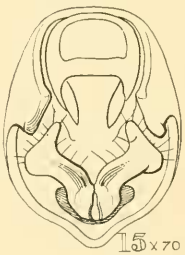

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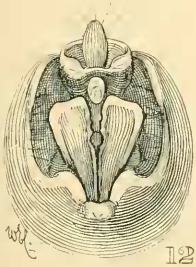

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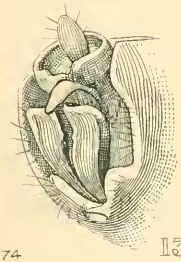

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PLATE XV.

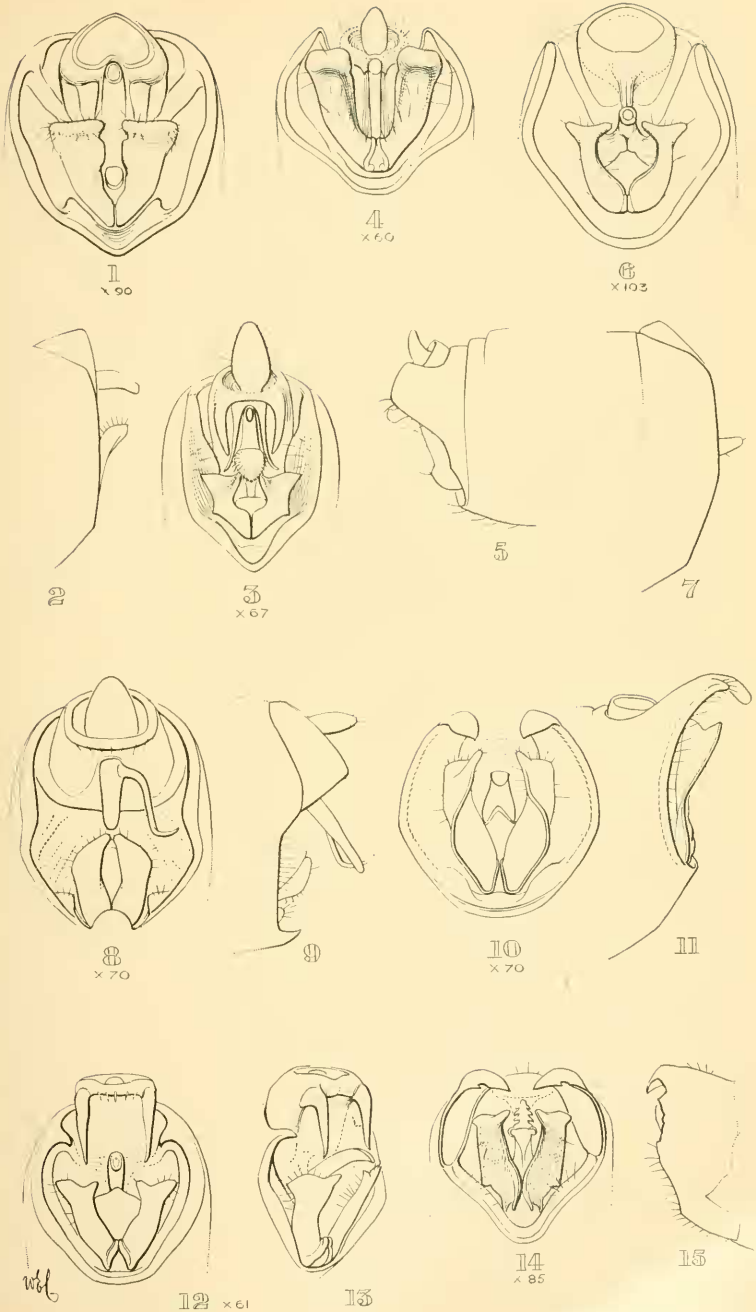
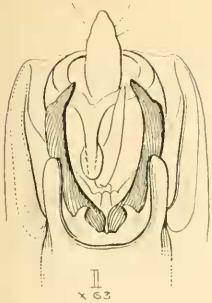


PLATE XVI.



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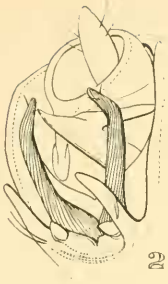

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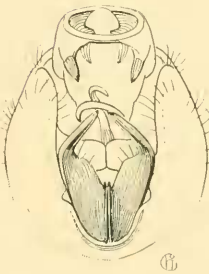

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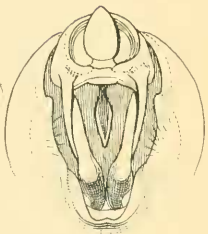

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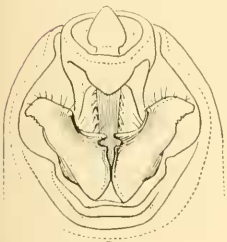

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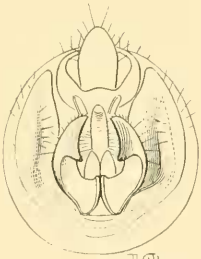

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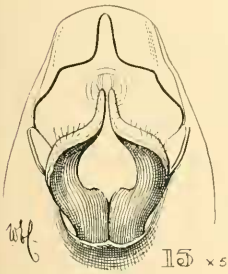

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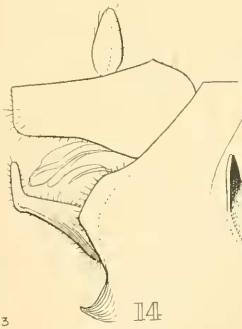

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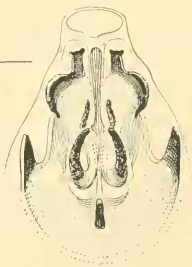

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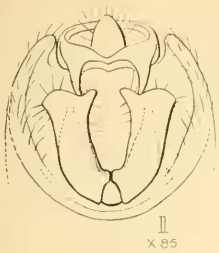
PLATE XVII.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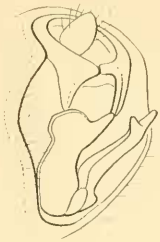
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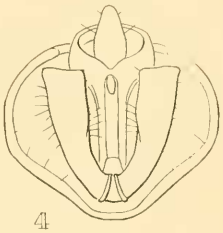
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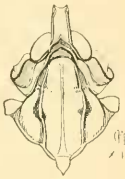
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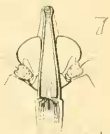
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X 12


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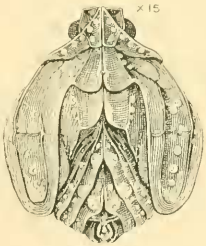
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X 15


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X 19


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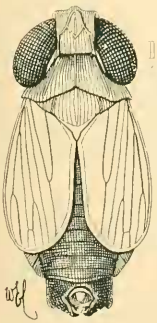
X 12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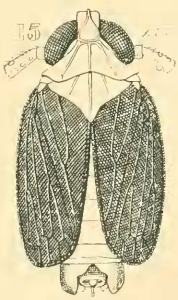
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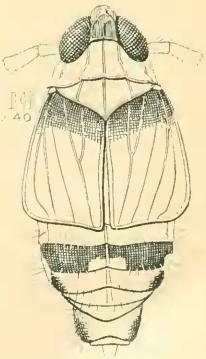
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X 40

PLATE XVIII.

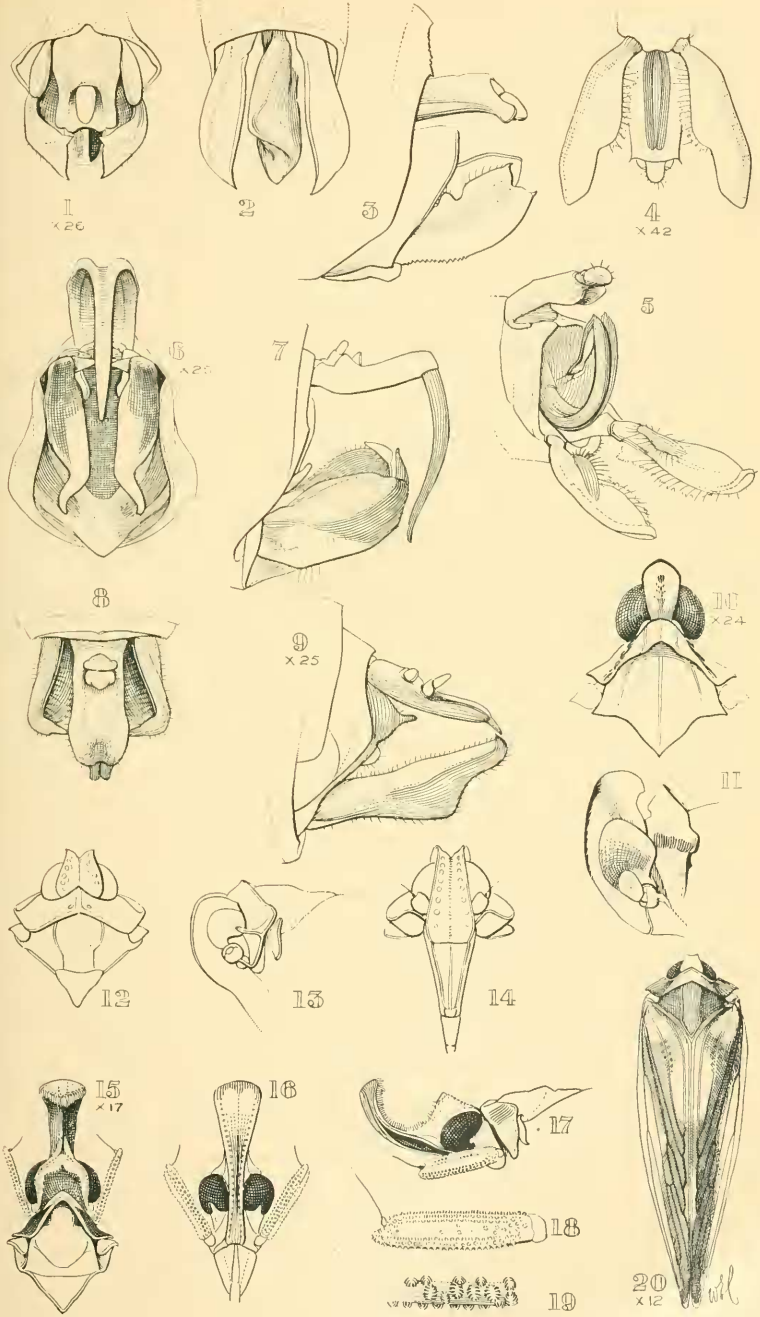

PLATE XIX.


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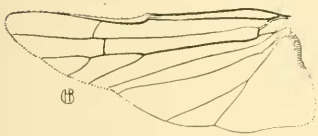
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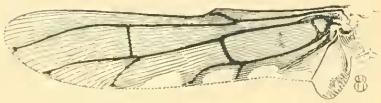
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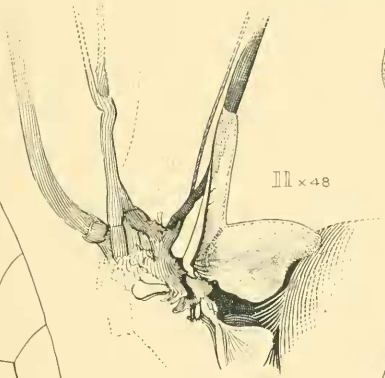
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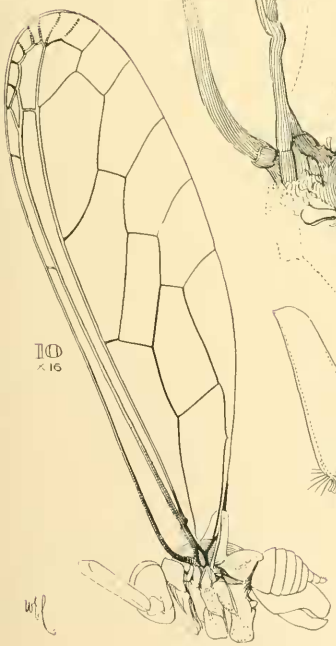
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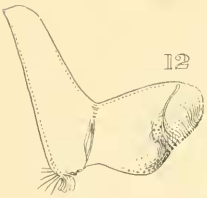
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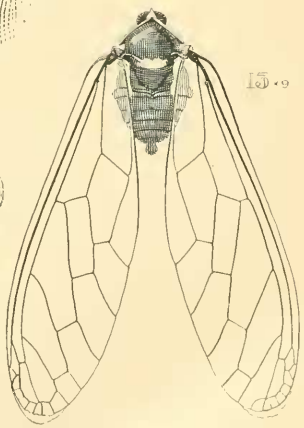
13 ×9

PLATE XX.